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The Journal
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VOLUME 11 SEPTEMBER, 1946 NUMBER 3

Speech After Laryngectomy*

Jack L. Bangs
D. M. Lierle
C. R. Strother

(This article is addressed to patients who are about to undergo the surgical removal of the vocal cords—an operation known as *laryngectomy.*)

The ability to talk plainly is a necessity in the modern economic and social world. This fact is ever present in the mind of the surgeon when he formulates plans of treatment for laryngeal diseases. After surgical removal of the larynx the patient suffers a severe emotional shock when he realizes the full meaning of his inability to talk as he formerly could. Fortunately, by close cooperation between the patient, doctor, and speech clinician, many of these patients acquire an esophageal voice which enables them to resume their former place in society. The speech therapist has rendered invaluable aid in the rehabilitation of these patients. This article gives a true insight into this work and every patient who is to undergo a laryngectomy should acquire much mental relief and reassurance by reading it.

Robert L. Pulliam, Jr., M.D.

ONE OF THE MOST important questions which confronts you as a patient before a laryngectomy is the aftereffects of the operation on your speech. Before any discussion of the operation and its aftereffects, however, it is necessary to give you some information about how speech is produced under normal conditions.

In order for you to speak, it is first necessary to draw air into your lungs through the windpipe, then force it out through the same pipe. As it comes out, it passes over two lip-like vocal folds which vibrate and produce sound. This sound is carried up the throat, and in the mouth it is molded or articulated into words. One of the best illustrations of this vibratory action can be seen in the process of producing sound with a bugle. The musician cannot produce tone merely by blowing into the mouthpiece. In order to make sounds he must allow his lips to vibrate as he blows into the horn. The vibration of his lips makes a tone which is carried through the horn.

*This paper has been written with the purpose in mind of providing the patient about to undergo a laryngectomy with an explanation, couched in lay terms, of the speech problems which will confront him post-operatively.

The three authors are all on the staff of the State University of Iowa. Jack L. Bangs (M.A., Univ. Washington) is a Research Assistant in the Department of Speech; D. M. Lierle (M.D., Univ. Iowa) is Professor and Head of Oral Surgery and Otolaryngology, University Hospitals; and C. R. Strother (Ph.D., Univ. Iowa) is Associate Professor of Speech Pathology and Psychology.

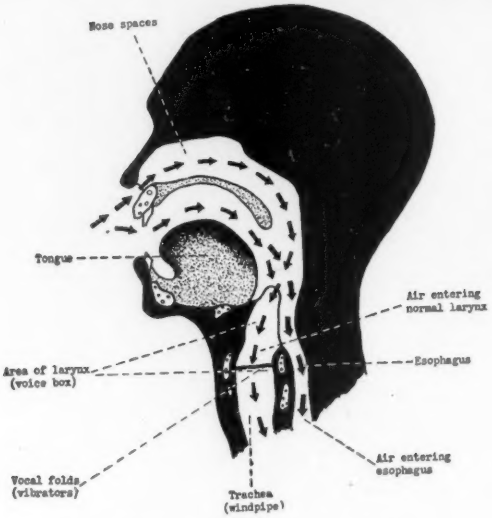

FIGURE 1. Throat before operation.

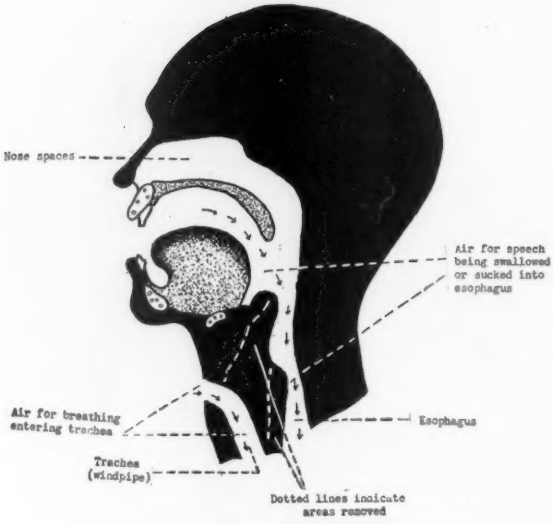
Nose spaces
Air for speech being swallowed or sucked into esophagus
Air for breathing entering trachea
Esophagus
Trachea (windpipe)
Dotted lines inaicate areas removed

FIGURE 2. Throat after operation.

Contrary to what is usually thought, words are not produced by the voice box alone. It merely provides the sounds which are then formed, or articulated, into words by the lips, teeth, tongue, mouth, and throat. Even without sound from the voice box, speech in the form of whispering is possible. After laryngectomy operations, patients often develop a voice which makes use of the principle of whispering in that they form the air in their mouths into whispered sounds which often can be heard and understood in a fair-sized room. This type of voice is known as 'buccal voice' and is not recommended for reasons which will be pointed out later.

From this discussion you can easily understand that in order to speak the following things are essential: a tube for the conduction of air and tone, air, a vibrator, and articulators or molders. In the process of normal

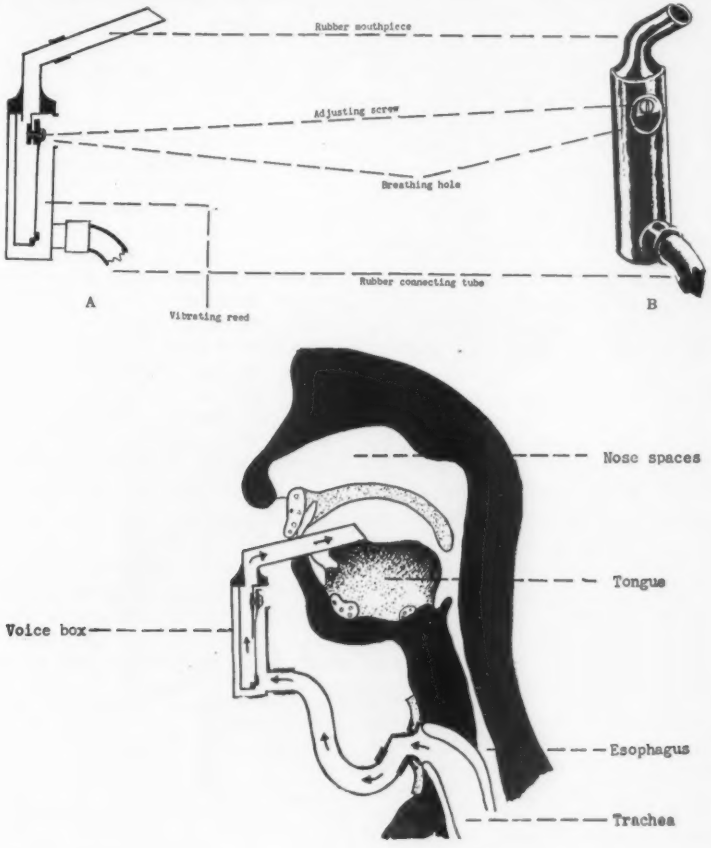

FIGURE 3. (Above) Cross-section and front view of reed type artificial larynx showing location of relevant parts. (Below) Position of artificial larynx when in use.

speech these are provided by the trachea, breath, the larynx or voice box, the lips, teeth, etc.

A laryngectomy removes the vocal cords and makes it necessary to close the passageway connecting the lungs with the mouth. After the operation the windpipe opens into a small hole in the neck, as shown in Figures 2 and 3, which provides an air intake for breathing.

Breathing will be performed just as easily as before, but there are several activities which will be affected. Since the air will pass directly into your lungs, rather than through your nose and throat, it will not be warmed or filtered as it is during normal breathing. This means that you should be more careful about exposing yourself to dust or to extremely cold air. You will not be able to blow your nose or to sneeze. At first, your sense of smell will be less acute, but will probably improve in time. You will find that heavy work will be out of the question, as it will not be possible for you to "hold your breath" which must be done when lifting or moving heavy objects. Your physical appearance will not be changed—the small opening in the throat can easily be concealed by wearing apparel.

None of these aftereffects of the operation is a serious handicap and will affect very little your social or economic life. The fact, however, that you will be unable to talk will be a serious handicap until you have learned a new way of speaking. Fortunately there are several methods of speaking which you may use.

SPEECH may be produced through the use of an artificial larynx. There are two main types available, one of which is air driven while the other is electrically operated. The air-driven voice box is a tube, one end of which is placed over the windpipe opening, the other end in the mouth (Figure 3 C). Within the tube is a reed which vibrates when air from the lungs passes over it (see Figure 3A). All of the air-driven types of artificial larynges operate in much the same manner. There are two outlets for air, one a direct opening to the outer air which by-passes the vibrator, so that when this outlet is open no sound will be heard from the voice box. When it is desired to speak, this hole is closed off with a finger, causing the air to pass over the vibrators. The sound then passes through the tube to the other opening located in the mouth where it is articulated into speech (see Figure 3 C-B). With very little practice, one can learn to produce understandable speech with this larynx.

The air-driven type of artificial larynx has a number of disadvantages which the prospective user should consider: The larynx must be carried at all times; when in place it is rather conspicuous; being mechanical, it is subject to damage with a consequent loss of speech; it must be cleaned often; the voice quality is metallic and there is little variation in pitch, so that the tone is somewhat monotonous.

The electrically operated voice box consists of an electrically driven buzzer operated by batteries (see Figure 4). The vibrating mechanism is contained in a tube or shell which is placed against the throat. When the current is turned on the resulting buzzing sound passes through the

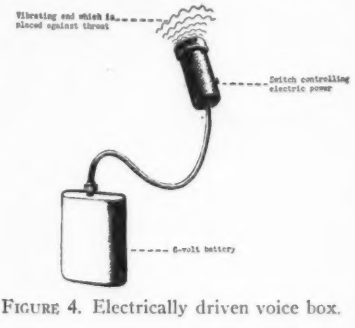

FIGURE 4. Electrically driven voice box.

walls of the throat and then up into the mouth, where it is articulated into words. As with the air-driven type, the mechanism is subject to failure or breakage, the device and battery are bulky, its use is conspicuous, and the resulting speech is monotonous in tone. While artificial larynges are not to be preferred to the esophageal speech, later to be described, many patients have found them satisfactory and use them. If it is not possible for you to produce esophageal voice, you can always start using an artificial larynx.

Most patients, after this type of an operation, develop a form of speech called 'buccal whisper' which uses the air present in the mouth. In this method of speaking the only sounds which are actually produced are the voiceless consonants. These sounds are *t* as in *t*able, *p* as in *p*ipe, *th* as in *th*in, *s* as in *s*alt, *sh* as in *sh*ush, *f* as in *f*un, *k* as in *c*an, *h* as in *h*ow, and *hw* as in the word *wh*en. The rest of the sounds in words are not spoken but are formed by the lips and 'read' by the listener. This speech can be understood by the immediate family who 'see' it often, but obviously would not do very well for the conducting of business or for social conversation.

THE LAST TYPE of speech to be considered is by far the most acceptable and satisfactory. It is called *esophageal speech*. When it can be developed—as it can if the user is willing to make the effort to learn—it combines the following advantages over an artificial larynx: (1) it is more natural in quality, (2) there are no appliances which are conspicuous or embarrassing, and (3) the speaker is not dependent upon devices subject to mechanical failure.

It has been pointed out that for the production of speech it is essential to have air, a tube for the conduction of air, a vibrating mechanism to produce sound, and articulators to change or form these sounds into recognizable words. The articulators (teeth, tongue, etc.) have in no way been altered by the operation, but the vibrator has been removed and the air tube no longer enters the mouth. There is, however, a tube—the esophagus—present in the throat through which you can learn to force air (see Figure 2). This tube is so constructed that it is possible to swallow air and hold it as a reservoir. The user of esophageal speech utilizes substitute vocal folds which can be developed through practice at the upper end of this tube, plus muscles already present, to produce a tone. As a matter of fact, nearly every one has made this sound at one time or another in his life, though not giving much thought to what made it. The sound is a *belch* which, when practiced and manipulated by the speaker, can be changed into a tone easily molded and articulated into excellent speech, varying in pitch and completely understandable.

When a person belches under normal conditions, the sound is caused by air rising from the stomach which makes the upper narrow portion of the esophagus vibrate. The speaker using esophageal speech must learn to swallow air in the form of a bubble, or suck it into the esophagus, then force it out by the contraction of the chest muscles. This air passing up the esophagus will produce a tone, which can be articulated.

The swallowing process is exactly the same as in swallowing food, but in this case you use air. The procedure is to form the air in your mouth into a bubble which is forced, by swallowing, into the esophagus where it forms a reservoir. The bubble is forced out by contraction of the throat and chest muscles and the ensuing sound is utilized for speech.

It will take a great deal of practice to do this at will, but it will be possible after some time to get a large enough reservoir to enable you to say a number of words or a short sentence on one such swallowing action. Some

people find it easier, while learning, to swallow a small quantity of air and emit it immediately, while others can allow the bubble to drop a little lower into the esophagus before contracting the throat and chest muscles and forcing it out. After you have practiced a few times, you will notice which is easier for you to accomplish.

It is urged that you practice before the operation for four or five minutes at a time, several times a day. Such practice will assist you later when you are learning to use esophageal speech. If you are practicing the sucking action before the operation, merely close off the windpipe by contracting throat muscles and the air will rush down the esophagus. If practicing after the operation, it may be necessary to close the windpipe by placing a finger over the opening in your neck when attempting the sucking action. You will, however, have to learn the action without closing the trachea if you wish to develop natural speech. Control of the sound emitted is at first very difficult and will require a great deal of concentration and practice. When you are practicing and notice a sound, it is urged that you try immediately to reproduce it. Once you have mastered this, the hardest part of the learning is over.

When you are at last able to make the sound at will, you will be able to try simple vowels such as *ah, oh, ay, ee,* and *oo.* After the vowels have been practiced, you may combine them with the voiceless consonants, which can be produced through the articulation of air held in your mouth. Suggested exercises are *at, eat, up,* then a combination with voiced consonants as *in, on, no, oh no, eat at, pole,* and other easy-to-make short words and syllables. You will find that there is a tendency at first to try very hard, with a resulting tension and tiredness in the throat. The more relaxed you make your throat the easier it will be to produce and control sounds. Do not attempt to get more than enough air into the esophagus while practicing, as the learning must progress from sounds, to syllables, to words, to phrases, and then to sentences, and each step should be well learned before going on to the next.

The most important thing for you to remember is that this is not an easy thing to learn and you must work hard, though not for long periods of time. It is recommended that you practice before the operation as suggested. After the operation a rest period will be necessary to allow the wound to heal, but when this is over you can practice the same as before, gradually increasing the periods to ten or fifteen minutes three or four times a day.

Progress will be slow but it will pay you to stay with it, because the result is a good speaking voice which you can use in business or social conversation with comparative ease. There are cases on record where men have returned to such businesses as retail selling, law, the ministry, and executive positions.

Infant Speech Equations For Consonant-Vowel Ratios

Orvis C. Irwin*

THE PURPOSE of this article is to analyse the speech sounds of infants in terms of two indices. These are the consonant-vowel type ratio and the consonant-vowel frequency ratio. Other indices have been described previously (**2, 4**). Further aims are to derive equations from the data and to show curves which are representative of the equations.

Ninety-five infants under two and a half years of age were subjects of the study. The ratio of the number of consonants to the number of vowels was determined for each infant for each two month period of the first thirty months. The mean ratio was then determined for each of the fifteen periods. These ratios constitute the data to be analyzed. The problem of variability is not treated in this article.

The two ratios are defined as follows. When the number of consonant types is divided by the number of vowel types, the ratio is the consonant-vowel type ratio. Its symbol is $\frac{C_T}{V_T}$. When the number of consonant frequencies is divided by the number of vowel frequencies, the ratio is the consonant-vowel frequency ratio. Its symbol is $\frac{C_F}{V_F}$. In order to avoid the use of decimal points the ratios have been multiplied by 100. The number of *types* means the number of different consonants and vowels, as listed in the International Phonetic Alphabet and used by the infants. The number of *frequencies* means the number of times the different sounds are uttered. The formulas for these ratios have been worked out by Chen (**1**).

The data are shown in Table 1, which includes both ratios, the number of infants in each bimonthly period, and the number of records involved. The table should be read as follows: for the first bimonthly period the number of infants is 62, the number of records secured from these infants is 125, the $\frac{C_T}{V_T}$ ratio is 63, and the $\frac{C_F}{V_F}$ ratio is 25.

TABLE 1. Means of consonant-vowel ratios at successive ages from one to thirty months.

Bimonthly Age Group	*Number of: Subjects*	*Records*	*Means For:* $\frac{C_T}{V_T}$	$\frac{C_F}{V_F}$
1-2	62	125	63	25
3-4	80	181	70	29
5-6	75	166	76	36
7-8	64	170	89	40
9-10	62	147	95	46
11-12	62	149	110	59
13-14	57	127	109	57
15-16	55	128	111	65
17-18	50	106	109	63
19-20	41	84	126	70
21-22	37	68	122	83
23-24	31	52	128	89
25-26	32	51	134	93
27-28	24	41	135	90
29-30	19	27	139	98

The equation derived from the means of the consonant-vowel type ratio is $\frac{C_T}{V_T} = 36.19\,A^{0.439} + 21.4$, and of the consonant-vowel frequency ratio it is $\frac{C_F}{V_F} = 5.4\,A + 19.4$. The curves which represent these equations

*Professor Irwin (Ph.D., Ohio State) is Research Associate Professor of Psychology and Child Welfare at the State University of Iowa. The above article is one of a series of analyses of data collected in a study done at the Iowa Child Welfare Station.

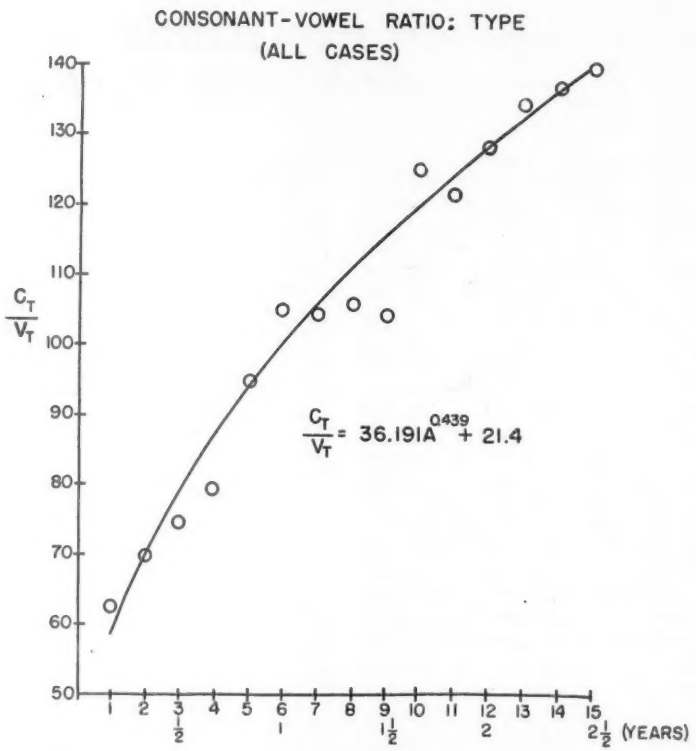

FIGURE 1. Graph showing curve which represents the equation for consonant-vowel type ratio.

are shown in Figures 1 and 2. Age (A) is plotted on the *x* axis and the ratios on the *y* axis. When the X^2 test of goodness of fit is applied, the value for the type ratio fit is 4.847 (P= .98); for the frequency ratio fit, it is 1.979 (P = .99). Thus with 14 degrees of freedom there are 99 chances in 100 that the differences between observed and theoretical values are due merely to fluctuations in random sampling. It is evident that the goodness of fit of these mathematical curves to the empirical data is adequate.

The type ratio curve approximates a parabolic arc, while the frequency ratio curve is linear. This means, of course, that the type ratio data show a changing—that is, a decelerating—rate of progress, whereas the frequency ratio data have a constant rate over the two and a half year period.

The empirical data of the type ratio, however, exhibit a peculiar aspect during the first half of the second year of life not apparent in the frequency ratio curve. During this period it would seem that the development of the type ratio has reached a temporary plateau. An inspection of the empirical values for the separate consonant and vowel type means (3) reveals a tendency for their rates at

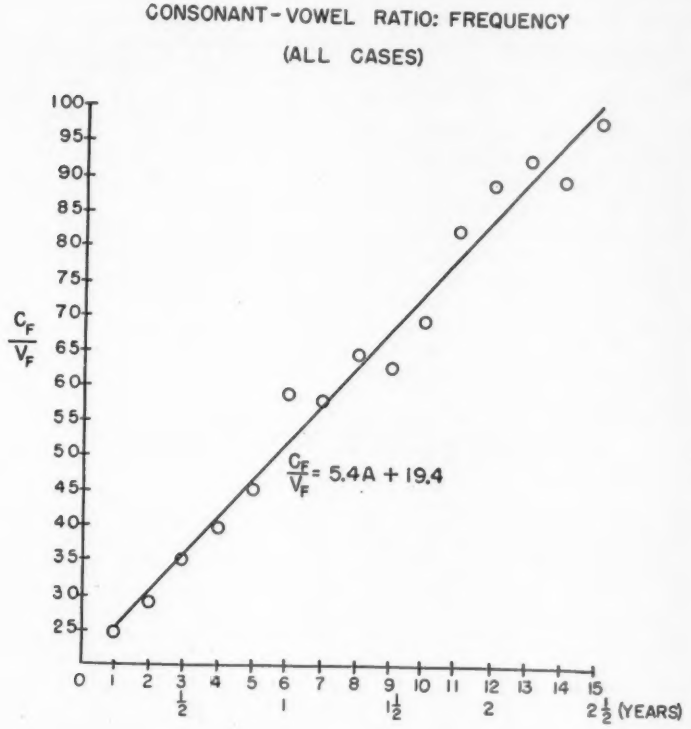

FIGURE 2. Graph showing curve which represents the equation for consonant-vowel frequency ratio.

this time to approximate each other. This retardation may be reflected in the consonant-vowel type ratio. Thus, during this period the ratios which are derived from consonant and vowel types remain unchanged, instead of showing the gradual increment in size as implied, in this part of the theoretical curve.

The equation for the consonant-vowel type ratio, therefore, is actually more complex than the one presented above. It has been selected because its goodness of overall fit, in spite of the irregularity, is satisfactory, and because it is easier to use. A caution should be observed, however, when drawing any applied or clinical implications from this part of it. It would be better to refer to the curves for the separate vowel and consonant types (3). The curve for the consonant-vowel frequency ratio is unaffected by this situation.

SUMMARY

TWO INDICES of speech development, the consonant-vowel type ratio and the consonant-vowel frequency ratio, have been applied to speech data of 95 infants during the first two and a half years of life. The

equations derived from the means of the bimonthly ratios are $\frac{C_T}{V_T} = 36.19\ A^{0.439} + 21.4$, and $\frac{C_F}{V_F} = 5.4\ A + 19.4$. The curve representing the first equation is curvelinear and for the second it is rectilinear, indicating that progress as measured by these ratios is not the same. A caution concerning the use of part of the type ratio curve is suggested.

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A DIFFERENCE THAT MAKES A DIFFERENCE

The ability to create symbols and respond to symbols is an essential difference between the world of brutes and the world of men. Without symbols, man's life would be one of immediate appetites, immediate sensations; limited to a past shorter than his own lifetime, at the mercy of a future he could never anticipate, never prepare for. In such a world out of hearing would be out of reach, and out of sight would be out of mind. By means of symbols man builds a coherent world out of patches of sense-data and gleams of individual experience.

The failure to understand the role of symbolization in human life has been responsible for a grave misunderstanding of the nature of man. . . .

Communication, communion, and co-operation, the three essential attributes of human society, are all dependent upon the acceptance of common symbols to which the same meanings, functions, and values are attached. Without those symbols there may be cohabitation; there may even be a primitive kind of co-operation confined to the visible object and the passing moment: but no more. And in turn, the deepening humanization of man in society depends upon his capacity to turn experiences into symbols and symbols into life-experiences. With limited symbols, he lives in a closed world, closed in time, closed in space: a world without distances, perspectives, prospects. Only by means of symbols can man widen the powers of discrimination and the acts of choice: only by symbols can he release himself from immediate pressures and cast the events of his life into an order he has pre-ordained and shaped in the mind. Thus symbols are not vicarious substitutes for experience but a means of enhancing it and enlarging its domain. . . . There is no poverty worse than that of being excluded, by ignorance, by insensibility, or by a failure to master the language, from the meaningful symbols of one's culture: those forms of social deafness or blindness are truly death to the human personality.

LEWIS MUMFORD, *The Condition of Man* (Harcourt, Brace, 1944), 8, 9.

Malingering and Psychogenic Deafness

Leo Doerfler
Kenneth Stewart*

THE NEED for a single method of differentiating between organic hearing loss on the one hand, and psychogenic deafness or malingering on the other, has been keenly felt for a long time by the Aural Rehabilitation Service at Deshon General Hospital. Along with reports of progress made by Russian medicine, extensive clinical experience with some thousands of patients at Army hearing centers has emphasized the desirability of early diagnosis in successful treatment of patients with non-organic hearing loss.

Ordinary malingering tests do not prove useful in identifying the patient with a psychogenic hearing loss, for the evident reason that he reacts as though his hearing loss were real. He usually cannot be tripped up by trickery, and it has been our experience at Deshon that consistency of response on successive audiometric tests or speech reception tests is not always indicative of an organic hearing loss. In fact, several of our patients whose hearing loss later turned out to be entirely functional gave results on repeated tests which were well within the limits of uniformity to be expected from a physical loss.

The relative consistency of response so often characteristic of the patient with either functional overlay or solely functional hearing loss may be explained easily. The patient employs a figurative yardstick against which all sounds are gauged. Consciously, in the case of the malingerer, and unconsciously, in the case of the person with psychogenic loss, the patient constantly applies this yardstick and fails to respond to any sound which is fainter than his self-imposed threshold. As long as he is in a relatively uniform sound environment his yardstick will remain stable. For this reason consistent responses are often obtained in a test situation even though the loss is not an organic one. Tests which take place in a stable sound environment give the patient an opportunity to gauge the proffered stimulus against his unconscious yardstick. Therefore, such tests prove relatively useless in isolating psychogenically deaf patients. Furthermore, one cannot trap these patients, for their loss is not a volitional one and hence cannot be revealed in an unwary moment.

THE KEY to the problem of discovering psychogenic loss seems to lie in destroying, or at least disturbing the patient's unconscious yardstick, so that he has no reliable means of determining the loudness of the stimulus, and therefore cannot give responses on a consistent basis. Following this line of reasoning various attempts were made at Deshon General Hospital to find a technique whereby the conscious yardstick of the malingerer and the unconscious yardstick of the psychogenic case could be sufficiently disturbed so that appropriate tests would discriminate between psychogenic and organic hearing loss. One procedure emerged

*This paper was presented by Leo Doerfler and Kenneth Stewart, members of the Acoustic Clinic at Deshon General Hospital, Butler, Pennsylvania, at the 1945 Convention of the American Speech Correction Association.

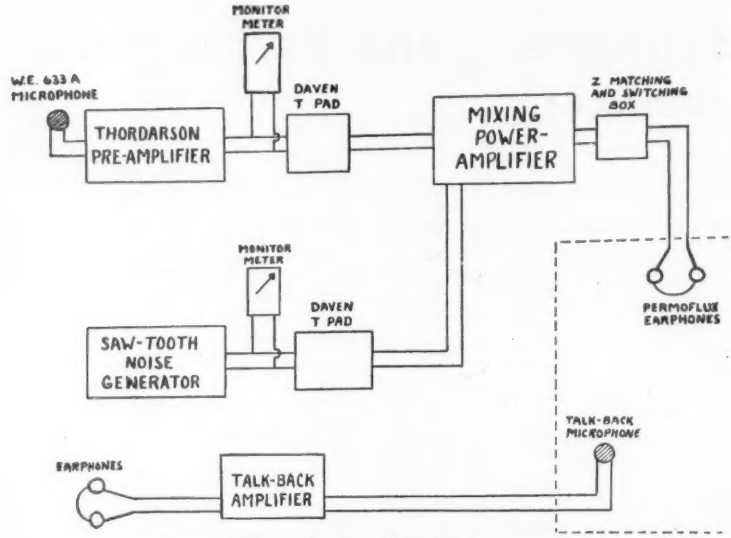

FIGURE 1. Block diagram of D-S test apparatus.

as being good enough so that it was incorporated in a formal test for psychological hearing loss.

Preliminary experimentation showed that when noise is introduced in measured quantity into a system where speech is also present, the patient with psychogenic hearing loss responds in a different manner from the patient with normal hearing or with purely organic hearing loss. In cases of organic loss, a relatively fixed relationship persists between the speech and the masking level of the background noise. This relationship is radically disturbed in the case of the psychologically deaf patient.

More specifically, experimentation showed that persons with either normal hearing or organic losses were usually able to hear and repeat speech correctly until simultaneously presented noise exceeded the speech level by 10-25 sensation units. Further experimentation with normal subjects indicated that this relationship was a linear one. In other words, when speech was presented at a level of 20 db above threshold, subjects were able to repeat the speech until noise gradually introduced into the line was at least at a level of 30 db above threshold. Similarly, when speech was presented at a level of 60 db above threshold, it was intelligible until the noise reached a level of at least 70 db above threshold.

Patients with perceptive, conductive and mixed type hearing loss evidence much the same results as the normal subjects. Furthermore, the relation was relatively independent of the pattern of pure tone loss. One difference, however, was that relatively inexperienced patients were not able to go as far into the noise as the normals who had previous experience listening for faint sounds. In general, patients with hearing loss were able to tolerate less noise than normals before the speech was masked out for them. However, considerable variability was found. Some patients with organic loss were disturbed when the noise level was approximately equal to the speech level, while others could tolerate as much

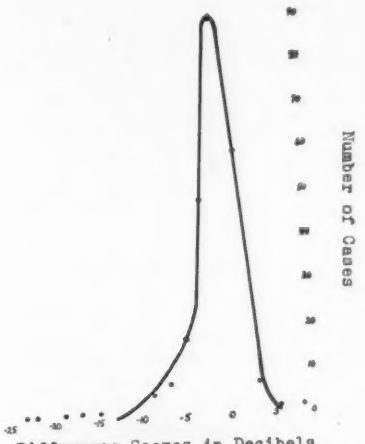

FIGURE 2. Frequency distribution of differences in db between original and repeat speech reception thresholds. (Repeat speech reception threshold minus original speech reception threshold.) Note cases showing sharp discrepancy between two scores.

noise as normals. Ability to hear and repeat speech in a masking noise which is at least equal in sensation units to the speech level may usually be regarded as evidence of organic loss.

The patient with functional hearing impairment, however, does not show the type of response just described. His mental yardstick for gauging sound is disturbed. He often ceases to repeat speech when the masking noise level is much fainter than would be expected to disturb an organic loss case.

IN THE LIGHT of what was discovered, it was not difficult to plan a test and devise a technique designed to separate the patients with psychological deafness or with functional overlay from the cases of organic loss. A test of this type has been administered routinely to all patients entering the Aural Rehabilitation Service since 1 October 1945.

The procedures of the test, which for convenience is called the D-S Test, are as follows:

The patient is seated in a sound proof room. The examiner adjusts matched earphones on the patient's head and then conducts the test from an adjacent sound treated talking booth, from which he can view the patient without being seen himself. This procedure prevents any possibility of lip reading.

Basically, the D-S test determines four measurements of audition. These are: (1) a speech reception threshold, (2) a noise interference level, (3) a noise perception threshold, and (4) a repeat threshold on speech reception.

The two speech reception thresholds are obtained with the conventional technique of monitored live voice. The tester speaks Harvard bi-syllabic words (spondees) into a microphone. The level at which these words reach the patient is controlled electrically. The level is reduced until the patient can just repeat 50 per cent of the words correctly. When this occurs, the patient's avowed threshold of sensitivity for speech has been reached.

The noise interference level is determined in the following manner. A continuous series of spondees is spoken 5 db above the speech reception threshold, thus insuring approximately 100 per cent correct response from the patient. Simultaneously, the masking noise is intro-

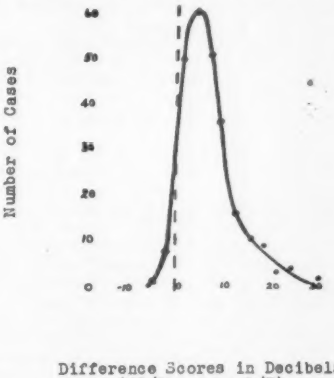

FIGURE 3. Frequency distribution of differences in db between speech reception threshold and noise threshold. (Original speech reception threshold minus noise threshold.) Note few cases showing better threshold for speech than for noise.

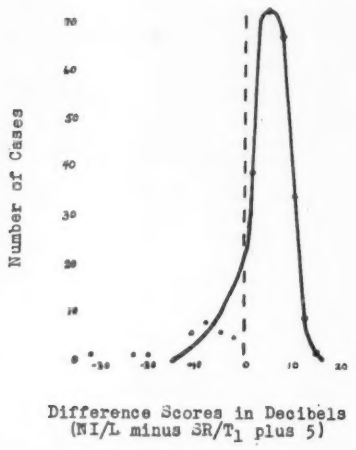

FIGURE 4. D-S ratio, or frequency distribution of differences in db between noise interference level and speech reception threshold. (Noise interference level minus original speech reception threshold plus 5 db.) Note cases where low noise level interfered with higher speech level.

duced and then gradually increased. This procedure is continued until the masking noise reaches a level where it inhibits speech reception and prevents repetition of the words by the patient. The point at which inhibition occurs is recorded as the noise interference level.

The noise reception threshold, or the level at which the patient is first aware of the noise, is measured separately. The technique is identical with the conventional method for determining a pure tone threshold.

The equipment used in the D-S Test consists of high fidelity apparatus. The microphone is a Western Electric 633A, working into a Thordarson multiple channel amplifier. The speech line is coupled through an attenuator to the input of the mixing amplifier, and a constant level of speech is maintained by monitoring with an intensity meter.

The noise source is a specially constructed generator which provides a sawtooth type of noise with a base frequency of 128 cycles. Thus, the noise contains the base frequency plus all its overtones.

The speech signal and the noise signal are electronically mixed and after further amplification, are fed into two Permoflux receivers. The frequency response of the amplifier is ± 2 db from 100 to 15,000 cycles per second. Voltage regulation is used to prevent ripple or interference due to line voltage fluctuation. Frequency response curves on the Permoflux receivers indicate that they are essentially flat from 100 to 4500 cycles, thus insuring a frequency response in the acoustic output which is fully adequate for testing reception of speech.

At its maximum undistorted output the system can deliver both speech and noise at approximately 95 db above normal threshold.

The D-S Test is interpreted by assessing the series of relationships which exist between the four measures obtained during the test. Particularly important are the following relations: (1) ratio of speech threshold to noise interference level, (2) ratio of speech threshold to noise threshold, and (3) ratio of first speech threshold to repeat speech threshold. A few statistics will illustrate the meaning of these ratios. These statistics were gathered on a consecutive series of 250 admissions to the Hard of Hearing Service.

IN SUMMARY, four measurements are made in the D-S Test. They are: (1) the speech reception threshold, (2) the noise perception threshold, (3) the noise interference level, and (4) the repeat speech reception threshold. The relationships between these measurements are used as the basis for isolating cases of psychological deafness or functional overlay. Specifically, one or more of the following conditions raise the suspicion that the patient exhibits non-organic loss:

1. When speech reception is inhibited by a noise interference level less intense than the speech presentation level.

2. When the noise perception threshold is poorer than the speech reception threshold.

3. When there is sharp discrepancy between the two speech reception thresholds.

In the case of a suspected malingerer, variations of the techniques al-

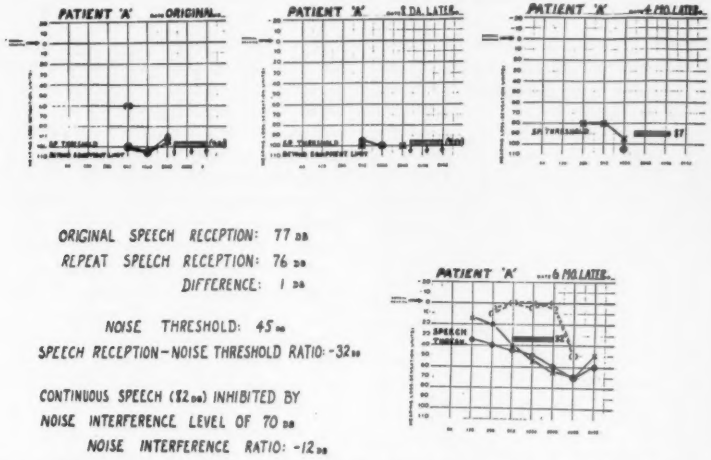
PATIENT 'A' ORIGINAL
PATIENT 'A' 1 DA. LATER
PATIENT 'A' 4 MO. LATER
PATIENT 'A' 6 MO. LATER
SPEECH THRESHOLD
ORIGINAL SPEECH RECEPTION: 77 DB
REPEAT SPEECH RECEPTION: 76 DB
DIFFERENCE: 1 DB
NOISE THRESHOLD: 45 DB
SPEECH RECEPTION-NOISE THRESHOLD RATIO: -32 DB
CONTINUOUS SPEECH (82 DB) INHIBITED BY
NOISE INTERFERENCE LEVEL OF 70 DB
NOISE INTERFERENCE RATIO: -12 DB

FIGURE 5. Case of functional overlay of hearing loss isolated by the D-S test. Moderate organic loss functionally exaggerated into severe loss.

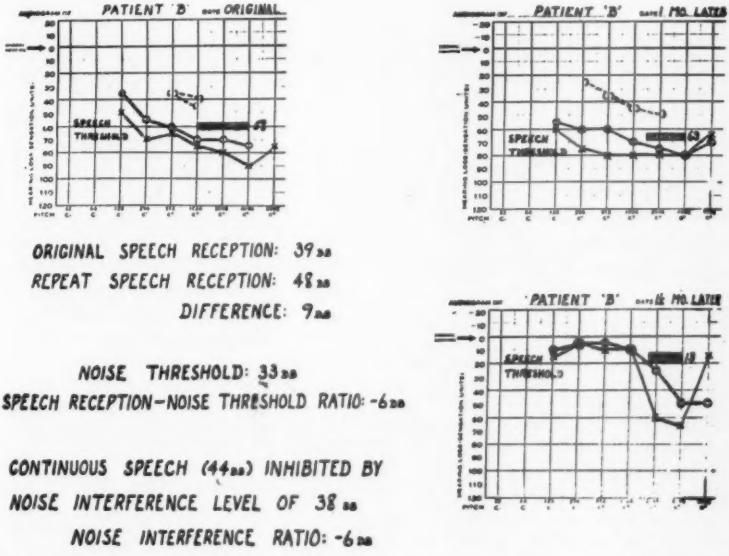
PATIENT 'B' ORIGINAL
PATIENT 'B' 1 MO. LATER
PATIENT 'B' 11 MO. LATER
SPEECH THRESHOLD
ORIGINAL SPEECH RECEPTION: 39 DB
REPEAT SPEECH RECEPTION: 48 DB
DIFFERENCE: 9 DB
NOISE THRESHOLD: 33 DB
SPEECH RECEPTION-NOISE THRESHOLD RATIO: -6 DB
CONTINUOUS SPEECH (44 DB) INHIBITED BY
NOISE INTERFERENCE LEVEL OF 38 DB
NOISE INTERFERENCE RATIO: -6 DB

FIGURE 6. Case of psychogenic hearing loss isolated by the D-S test. Slight high-tone loss exaggerated into fairly severe loss.

ready mentioned have been used successfully. After the original speech reception score has been achieved, shall we say at 55 db above normal threshold, the noise level may be raised well above this level, to about 80 db. Then, under the guise of the noise, the speech input level may be set well below the patient's supposed threshold, say at 35 db or 40 db, and the noise level then gradually decreased. To the patient it appears as though the speech is rising out of the descending noise, and he may respond at this level, which is 15 or 20 db below his original threshold. Thus by an alternate noise-voice technique a malingerer with a supposedly severe loss may be brought down to within the normal range with little difficulty.

In a brief paper such as this only an over all picture can be presented. In general, the D-S Test furnishes a means of isolating the true organic hearing loss from the non-organic case. Even more definition can be achieved by interpreting the D-S Test in conjunction with an associated audiogram and a medical history. Such a procedure makes it possible to discover cases of functional hearing loss with comparative ease. Treatment of psychogenic losses encountered at Deshon General Hospital has become more precise and rapid since the D-S Test was incorporated as a clinical routine.

Myasthenia Laryngis: A Case Report

James H. Platt*

IT IS PROBABLE that 'myasthenia laryngis' is frequently mistaken for the more commonly mentioned disorder of hoarseness. Dr. Chevalier Jackson (**1**), authority in otolaryngology, describes it as a 'morbid entity characterized by asthenia of the phonatory musculature of the larynx, especially the powerful overworked thyroarytenoideus muscles.' It may be said that it is an organic disorder consisting of weakness of the intrinsic laryngeal muscles, and more specifically, the thyroarytenoideus. Neither intensive exercise nor complete vocal rest will completely cure this condition.

'Myasthenia laryngis' may also be confused with 'hysterical aphonia' in that there is frequently a loss of voice. In fact, both 'myasthenia laryngis' and 'hysterical aphonia' can be present in the same case. The two differ in that the former comes on gradually, while the latter usually appears suddenly.

The disorder, 'myasthenia laryngis', is brought on by vocal strain and is found mostly in public speakers and singers. Radio announcers and school teachers are often afflicted.

Examination with a throat mirror during phonation will often disclose a bowing of the true vocal folds. Much visible effort is made by many patients in producing sound. A muscular spasm frequently takes place in the throat during phonation, causing tone distortion.

THE WRITER wishes to present a somewhat typical case of myasthenia laryngis with an outline of the course of treatment used.

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Mr. J., a salesman for a large refining company, visited our speech clinic office on October 3, 1945. He is forty-eight years old and a resident of the state of Maine.

At the time Mr. J. visited us, most of his speaking was done under tremendous effort. There appeared to be a great deal of air pressure building up in the chest cavity. The patient soon became tense and relatively breathless and was forced to stop, exhale the air remaining in his lungs and inhale a new supply. His voice could be described as being of a hoarse, strained quality. Occasionally, all tension in the throat would disappear, and the patient would be able to speak in a low, clear resonant voice.

The disorder had been present for a year and a half prior to his first visit to the clinic. Previous to the onset, Mr. J. had been a heavy drinker of intoxicating beverages, often going on parties every night during the week. During business hours he used his voice excessively. His conduct was a source of contention between him and his wife, causing the patient to worry. His job, due to lack of new products and information about them, together with pressure from both employer and customers, also caused an excessive amount of worry.

Aphonia came on gradually, beginning as hoarseness. The patient discontinued drinking with the onset of the complete aphonia. Communication was carried on by writing. Mr. J. was placed on vocal rest by a local physician for several months, at the end of which his voice returned in the condition described above.

The patient thoroughly enjoys hunting and fishing, during which he has less vocal difficulty.

The report of the otolaryngologist stated that there was nothing visibly unusual about the vocal folds or larynx, the laryngoscopic examination being made under anasthesia. The medical diagnosis was 'psychological maladjustment and myasthenia laryngis'.

Since the patient was not financially able to take an extended leave from his work for a period of complete vocal rest before vocal treatment, it was decided that an unstrained whisper should be used as the method of communication. This procedure was strictly followed by the patient. A

program of relaxation (2) was initiated to aid the patient in determining the difference between muscles in their tensed and relaxed states.

Stress was first placed on easy diaphragmatic breathing. Rolling the head from side to side aided in relaxing tense neck and throat muscles. After a short period of practice breathing, humming exercises were practiced at a comfortable pitch. This procedure was repeated five minutes every waking hour over a period of six weeks. During this phase of training, smooth initiation of tone was developed. It was emphasized to the patient that each practice period should be no longer than five minutes and that the volume of tone should be kept at a minimum. All humming was practiced on a single, comfortably low pitch to prevent undue strain of the vocal folds.

When tone initiation became consistently smooth and the patient was able consistently to hold a tone constant throughout expiration of breath, simple monosyllabic words containing medial vowel sounds were introduced into the exercises. One word was spoken on each expiration of breath, with a prolongation of the vowel sound. It was necessary to stress the importance of relaxation of all muscles throughout the body during the exercises.

From the monosyllabic word exercises, the patient graduated to short sentences. These were read first in chant and later with slight pitch and volume variations. The patient has been cautioned against overuse and strain of the voice. At this writing, Mr. J.'s morale is extremely good. His voice is rapidly improving.

It is important that each additional phase of training be integrated with those previously used. All phases of the exercises should be repeated during each practice period, starting first with breathing, then phonation, etc.

These cases vary greatly, and the method of training must be adapted to the individual. However, the same general procedure, essentially as here described, will probably be found effective in all of the more simple cases of 'myasthenia laryngis.'

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Bibliography: Obturators and Artificial Vela

James H. Platt*

ADEQUATE understanding of prosthetic appliances for cleft palates is essential to the effective supervision of speech retraining. As the importance of good speech has come to be more and more accepted, it has come to be recognized as necessary and proper that cases of cleft palate receive the help of psychology, psychiatry, medicine and dentistry, together with that offered by the speech pathologist. The importance of joint cooperation of these professions in the interest of improved speech and personalities is obvious.

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Psychogenesis In Interdental Sigmatism

Helen Hulick Beebe*
Shulamith Kastein

THE VARIOUS FORMS of sigmatism have generally been ascribed to malformation, poor muscle control, hearing deficiency or hearing loss after acquisition of speech. In cases of hearing loss in adolescents and adults the *s* sound is usually replaced by *d* or *th*, a symptom which in small children may be purely physiological. Scripture (**3**) in speaking of a neurotic lisp, attributes it chiefly to a nervous tension. Simple experiments made by Froeschels (**2**) proved the entirely psychogenic nature of sigmatism interdentalis. Most persons with normal speech, when giving the *s* sound continuously with the head suddenly bent backward by the experimenter, soon change the correct *s* into a palatal one, the tongue, following the law of gravity, falling backward. *Observations of persons with interdentalis, however, show that the tongue, defying the law of gravity, not only retains its interdental position but in a great many cases protrudes farther when the head is bent backward.*

According to a study made by Froeschels of 254 untreated cases of interdentality, protrusion of the tongue while producing the *s* sound increased with backward bending of the head in 167 cases, while 63 cases showed no change in position (that is in extent of protrusion) and 24 cases allowed the tongue to slip backward slightly, reducing the protrusion but maintaining the interdental position. While 10 per cent of the untreated cases let the tongue slip back slightly with the head bent backward, 62 per cent of the cases studied during or after treatment showed the behavior pattern characteristic of normal speech—in other words, permitted the tongue to slip into a palatal position. Froeschels concluded that this defiance of the law of gravity in cases of interdental sigmatism was due to psychic resistance, causing the tongue to protrude under all circumstances.

Further proof of psychogenesis may be found in the fact that while other forms of sigmatism yield to some kind of mechanical treatment, interdental sigmatism sometimes appears incurable until psychotherapy is applied.

Some observations with regard to the treatment of sigmatism seem to support the theory of psychogenesis. In treating dyslalias one frequently experiences that the correction of one sound leads to the self-correction of others. For example a child substitutes *s* and *z* for *f* and *v*; when taught to give the correct *f*, he produces a correct *v* without further instruction. In multiple interdentality (interdental articulation of *d*, *t*, *n*, and *l* or any number of these sounds in addition to an interdental lisp) it frequently suffices to correct the *s* in order to achieve the correction of the other interdental sounds. The explanation in the case of *f* and *v* is simple enough since the same muscles are used in the same way, the only difference being the presence of voice in the *v*. In case of multiple interdentality, however, this explanation does not hold

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since the same muscles are used in different ways to form the correct *s* and *t, d, n,* and *l,* respectively; the groove in the center of the tongue necessary for the production of the *s* sound not being required in *t, d, n,* and *l.* In these cases the correction of the *s* may render the underlying neurotic background ineffective and the *t, d, n,* and *l* appear correct.

It is interesting to note that remnants of multiple interdentality can frequently be found in adults who have retained their interdental *s* while producing the other tip-tongue sounds behind the teeth. These persons produce the *t, d, n,* and *l* with the tongue in a horizontal position rather than the correct oblique position. In cases of originally multiple interdentality, the patient may give up the interdental articulation of *d, t, n,* and *l* because the interdental formation of these sounds offers no divergence from the auditory impression of correct speech. This does not apply to the production of *s* where the auditory impression, when the sound is produced other than correctly, is conspicuously different. The patients employ the different *s* as a continued resistance to conformity with normal speech.

During a recent discussion of the psychogenic origin of interdental sigmatism in the Speech Clinic of the Mt. Sinai Hospital, Mrs. Laura Rosenfeld suggested that to the lisper the interdental pattern of the *s* sound is the correct, habitual pattern and therefore is retained regardless of the position of the head, and that a normally interdental sound, the *th,* be tested. The maintenance of the pathological interdentality might be due to the touch or support which the tongue receives from the teeth, which may or may not be proved by testing the *th* during bending of the neck.

We have examined the behavior of the tongue during the production of the *th* sound in numerous children and adults having normal as well as pathological speech, and found that in a continuous repetition of words containing *th,* with the head bent backward, the tongue, following the law of gravity, soon falls back and the *th* becomes a dental or palatal one, much as is the case in normally produced *s* sounds. *This proves that interdentality as such does not hinder the falling back of the tongue with the head suddenly bent backward.* This observation supports the interpretation of pathological interdentality as psychogenic.

There may be significance in our experience that patients with stuttering symptoms—the writers hold stuttering to be entirely psychogenic—frequently show interdental sigmatism. In one case interdental sigmatism appeared as an accompanying movement and disappeared during the initial stages of treatment.

Froeschels' (**1**) findings of defiance (failure to allow the tongue to slip backward in repeated *s* sounds with the head bent backward) on 37 per cent of stutterers with normal *s* sounds during speech prove that stutterers are highly conscious of the position of the articulatory muscles, thus being able to defy gravity in order to maintain the correct position of the tongue.

Summary

1. Normal *s* changes into a palatal one when the head is bent backward suddenly.

2. In the great majority of cases with interdental *s* the tongue resists this slipping backward, a fact which seems to prove the psychogenesis of interdental lisping (as well as multiple interdentality).

3. It is not the feeling of touch which prevents the tongue from slipping backward, as proved by testing the normal *th* sound.

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French-English Speech Terminology

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A FEW MONTHS ago the authors were pleased to present a German-English Logopedic Dictionary to the graduate student of speech pathology, and to others interested in making research in the field of logopedics. It was the intention of the authors at that time to relieve the research worker of much of the tedious thumbing of the cumbersome volumes of dictionaries and encylopedias.

Again, with such an aim in view, the authors have devised a similar work in the field of French-English logopedics. In preparing this compilation of French terminology, a survey was made of French medical journals and dictionaries, such as Alfred Gordon's *French-English Medical Dictionary*, George Harrap's *Standard French and English Dictionary*, Joseph S. F. Marie's *Medical Vocabulary*, Speirs and Surenne's *The Standard Pronouncing Dictionary of the French and English Languages*, and Paul Blaschke's *Medizinisches Wörterbuch in Deutscher, Französischer, Englischer Sprache;* and, various articles in the French medical journals pertaining to speech pathology.

Also, in connection with the overall study, a survey was made of various medical encylopedias, dictionaries, books, and materials such as Robbins and Stinchfield's *Dictionary of Terms Dealing with Disorders of Speech*, Webster's *New International Dictionary*, Dorland's *American Illustrated Medical Dictionary*, Clarence Taber's *Cyclopaedic Medical Dictionary*, West, Kennedy, and Carr's *Rehabilitation of Speech, the Journal of Speech Disorders*, and various articles in the medical journals pertaining to the field of logopedics.

Finally, a French logopedic vocabulary was formulated, and translated into terminology, as employed by English writers in the present day field of logopedics. The French dictionary contains those terms, which the clinician most frequently encounters in his research. However, it does not pretend to be an exhaustive covering of the French phase of logopedics.

French logopedic terms are printed in bold face type; the English equivalent are in light type, with additional explanations where necessary. Key for the abbreviations is as follows: *m.*, masculine; *f.*, feminine; *v.*, verb; *adj.*, adjective.

French-English Logopedic Dictionary

Achoppant (adj.). Choppy, stumbling speech, characteristic of paresis.
Acuité (f.). Shrillness.
Agraphie (f.). Agraphia. Loss of ability to reproduce thoughts in writing.
Alalie (f.). Alalia. Loss of speech due to paralysis.
Alexie (f.). Alexia. Word-blindness.
Amnésie (f.). Amnesia. Lack or loss of memory; inability to remember proper words.
Amygdale (f.). Tonsil.
Anarthrie (f.). Anarthria. Defective articulation in speech; caused by defective peripheral mechanism.
Ankyloglossie (f.). Tongue-tie condition.
Anormal (adj.). Abnormal.
Aphasie (f.). Aphasia. Partial or complete loss of speech.
Aphémie (f.). Aphemia. Loss of articulate speech due to a central lesion.
Aphonie (f.). Aphonia. Loss of voice; voicelessness.
Aphrasie (f.). Aphrasia. Morbid refusal to speak.
Asthénie (f.). Asthenia; lack of vocal intensity.
Athétose (f.). Athetosis.
Auditif (adj.). Auditory.

Balbutie (f.). Stuttering.
Barboter (v.). To mumble.
Baryglossie (f.). Baryglossia. Slow, thick, indistinct speech.
Bec-de-liévre (m.). Cleft-lip.
Bégaiement (m.). Stuttering.
Bouche (f.). Mouth.
Bradyarthrie (f.). Bradyarthria. Scanning speech.
Bradylalie (f.). Bradylalia. Slow and labored speech.
Bradyphasie (f.). Bradyphasia. Slowness of speech of cerebral origin.
Bredouillement (m.). Stuttering; jabbering; mumbling.
Catalogie (f.). Catalogia. Repetition of meaningless words, phrases, or sentences.
Cataphasie (f.). Cataphasia; catalogia.
Cérébral (adj.). Cerebral.
Cerveau (m.). Cerebrum; brain.
Cervelet (m.). Cerebellum.
Chorée (f.). Chorea.
Cinesiologie (f.). Kinesiology.
Consonne (f.). Consonant.
Coprolalie (f.). Coprolalia. Uncontrollable utterance of 'filthy' words.
Corde (f.). Cord.
Corde Vocale Vocal cord.
Correction (f.). Correction.
Cul-de-sac (m.). Cul-de-sac.
Dents (f.). Teeth.
Désordre (m.). Disorder.
Diaphragme (m.). Diaphragm.
Dysarthrie (f.). Dysarthria. Difficult articulation in speech; labored, hesitant, jerky speech.
Dyslalie (f.). Dyslalia. Difficulty in articulation of certain consonant or vowel sounds.
Dyslexie (f.). Dyslexia. Inability to read due to word blindness.
Dysphonie (f.). Dysphonia. Hoarseness; disturbance of phonation.
Écholalie (f.). Echolalia. Meaningless repetition by a patient of words addressed to him.
Embolalie (f.). Embolalia. The insertion of stereotyped meaningless words in conversation.
Encéphalite (f.). Encephalitis.
Épiglotte (f.). Epiglottis.
Explosif (m.). Explosive.
Faconde (f.). Ready flow of speech.
Fausset (m.). Fauces.
Fente (f.). Cleft.
Fente Palatale Cleft palate.
Fiévre (f.). Fever; temperature.
Fiévre Cérébrale Brain fever.
Flasque (adj.). Flaccid; flabby.
Glossolalie (f.). Glossolalia. Distortion of sounds, so patient appears to speak his own invented language.
Glossoplégie (f.). Glossoplegia. Paralysis of the tongue.
Glossospasme (m.). Spasm of the tongue.
Glotte (f.). Glottis.
Gorge (f.). Throat.
Grasseyer (v.). To pronounce gutturally; to speak with a uvular *r*.
Hémiplégie (f.). Hemiplegia.
Hétérolalie (f.). Heterolalia. Speaking words other than those intended.
Hétérophasie (f.). Heterophasia. Expression of meaningless words instead of those intended.
Hypophonie (f.). Hypophonia. Whispered voice; reduction of intensity of voice.
Hypophrasie (f.). Hypophrasia. Poverty of speech.
Hystérie (f.). Hysteria.
Idiolalie (f.). Idiolalia. Extreme form of lalling or vowel or consonant substitution; distortion of sound so patient seems to speak his own language.
Idiophonie (f.). Idiophonia. Unpleasant vocal quality.
Iotacisme (m.). Iotacism. Undue accentuation of letter *i* when occurring between two other vowels; mispronunciation of *i*; mispronunciation of *dʒ*, *ʒ*, and *tʃ*.
Lalopathie (f.). Lalopathy. Any disorder affecting the speech.
Lalophobie (f.). Lalophobia. Neurotic disturbance of speech; marked dislike to speaking.
Laloplégie (f.). Laloplegia. Speech defect caused by a paralysis of the speech organs.

Lambdacisme (f.). Lambdacism. Defectice *l*; substitution of *l* for *r*.
Langue (f.). Tongue.
Larynx (m.). Larynx.
Lévre (f.). Lip.
Logasthénie (f.). Logasthenia. Disturbances of the higher thought processes as a result of the speech disturbances of aphasia.
Logomanie (f.). Logomania. Morbid talkativeness.
Logopédie (f.). Logopedia. Science dealing with the pathology of the speech organs and the correction of speech defects.
Logorrhée (f.). Logorrhea. Excessive volubility of speech.
Mogiarthrie (f.). Mogiarthria; stuttering.
Mogilalie (f.). Mogilalia. Difficulty of speech; stuttering.
Mogilalisme (m.). Stuttering.
Mogiphonie (f.). Mogiphonia. Neurosis leading to rapid failure of voice.
Monophasie (f.). Monophasia. A condition in which a single word or sentence is repeated constantly.
Mutisme (f.). Mutism. Absence of the faculty of speech.
Nasalité (f.). Nasality.
Nasalisation (f.). Nasalization.
Néolalie (f.). Neolalia. Introduction of new and meaningless words into speech.
Nevrose (f.). Neurosis.
Nodule (m.). Nodule.
Palais (m.). Palate.
Palilalie (f.). Repetition of syllables, words, phrases.
Paragrammatisme (m.). Paragrammatism. Inability to utter words in their correct sequence.
Paralalie (f.). Paralalia. Missing of letter sounds, or omission of letter sounds.
Paralogie (f.). Paralogia. Talking insanely; wandering in speech.
Paralysie (f.). Paralysis.
Paralysie Poliomyélite Infantile paralysis.
Paralysie de Naissance Birth palsy.
Paraphasie (f.). Paraphasia. A form of speech disturbance in which wrong words are used or the right words mispronounced.
Paraphémie (f.). Paraphemia. Mispronunciations; use of the wrong word.
Paraphonie (f.). Paraphonia. Defective phonation; cracking of voice.
Paraphrasie (f.). Paraphrasia. Disordered or incoherent speech.
Parasigmatisme (m.). Parasigmatism. Substitution of other sounds for the letter *s*.
Parésie (f.) Paresis.
Parole (f.). Speech; utterance; word.
Pathologie (f.). Pathology.
Phonasthénie (f.). Phonasthenia. Functional vocal fatigue; 'tired voice'; hoarse, raucous quality.
Phonation (f.). Phonation.
Phonétique (f.). Phonetics.
Phonomimie (f.). Lip-reading.
Phonophobie (f.). Phonophobia. A marked aversion to any sound; fear of speaking on the part of stutterers.
Polylogie (f.). Polylogia. Incoherent talkativeness; morbid rapidity of speech.
Polyphasie (f.). Polyphasia. Morbid talkativeness.
Polyphrasie (f.). Polyphrasia. Morbid loquacity.
Pronostic (m.). Prognosis.
Pseudolalie (f.). Pseudolalia. Utterance of meaningless sounds.
Psychonévrose (f.). Psychoneurosis.
Psychopathologie (f.). Psychopathology.
Psychose (f.). Psychosis.
Psychothérapie (f.). Psychotherapy.
Relachement (m.). Relaxation.
Résonance (f.). Resonance.
Respiration (f.). Breathing.
Respiration Profounde Abdominal breathing.
Rhinolalie (f.). Rhinolalia. Nasal speech.
Rhinophonie (f.). Rhinophonia. Nasal speech.
Rhotacisme (m.). Rhotacism. Defective utterance of the *r* sound; replacement of *r* by *l*, *g*, *w*, or ŋ.
Rigidité (f.). Tenseness.
Sigmatisme (m.). Sigmatism. Defective utterance of sibilants *s*, *z*, *ʃ*, *ʒ*, *tʃ*, *dʒ*.
Schizophasie (f.). Schizophasia. Confusion in speech; "word salad".
Schizophrénie (f.). Schizophrenia. Dementia praecox.
Son (m.). Sound.
Soubrelangue (m. or f.). Tongue-tied.
Spasme (m.). Spasm; twitching.
Tachylalie (f.). Tachylalia. Rapid, choppy, indistinct speech.

Tachyphasie (f.). Tachyphasia. Exceedingly rapid and indistinct speech. Tachylalia.
Tachyphémie (f.). Tachyphemia. Rapid, indistinct speech; excessive flow of words.
Tachyphrasie (f.). Tachyphrasia. Tachyphemia.
Thérapie (f.). Therapy.
Voyelle (f.). Vowel.
Zézayer (v.). To lisp.

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Speech Comes To A Five Year Old Boy

Ruth Beckey Irwin*

NO SPECIFIC factor or group of factors have been found to operate in the causation of the retardation of speech. Among a group of fifty children with delayed speech development such factors as complications of pregnancy and birth, cerebral injuries, diseases, handedness complications, lack of environmental stimulation, anticipation of the child's wants, mental deficiency, gesture language, and severe fright were present in larger numbers than among a group of fifty normal children (**1**). However, no two children with retarded speech were found to have the same combination of causal factors.

Bobby, the subject of the present discussion, was five years old when first seen by the writer, and appeared to be normal, physically and intellectually. He was a beautiful child. The older of two children, Bobby had a sibling four years younger than he. In spite of his otherwise normal condition, however, Bobby's speech development had not progressed beyond the level of a twelve-month-old baby. His only word was 'mama.' He used grunts and gestures for communicating his ideas. He appeared to be psychologically blocked as far as his speech was concerned.

Case History

ACCORDING to the child's records, the prenatal and natal histories were negative. However, the mother was extremely nervous during the child's early life, a period of financial insecurity for the family. This may have been partly responsible for the boy's emotional instability. Both parents and grandparents discussed the boy's inability to talk in his presence. The child's needs were anticipated by his associates; consequently, he found no necessity for speech. At the time the child was brought to the clinic, the family was in moderate financial circumstance. The father was quiet and sympathetic, but did not have much time to be with the boy, as he worked in an airplane plant. The mother was extremely nervous and impatient with Bobby because of his inability to talk. She was certain he could talk, and she appeared irritated because he would not try to talk even after repeated threats and bribes.

During one of the conferences, the mother indicated the efforts she and the father had made to get Bobby to talk:

> We have grunted back at him, have praised other children's ability to converse, and tried to make him feel ashamed. We have tried to bribe him, praise him, and punish him at various times. However, I don't think we used any of these methods to an extreme.
>
> We have always felt sorry for Bobby, but never ashamed. We feel it is our fault in failing to teach him to talk. Since he is mentally okay, we were lax in some way.
>
> We do not ignore his lack of speech and we are willing to do all we can to help him.
>
> This last year I have been easily upset by Bobby. After four years of whining and grunting, I have lost most of my patience with him, which I am forcing to regain. I am also in the care of a doctor, who is trying to help my nerves by giving me shots.

Bobby had developed a fear of all strangers, especially children. The following note from the mother indicated the fear that Bobby had for children his own age:

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Bobby was in a swing, at a park. He wanted me to push him. I was busy with the baby so I asked a boy Bobby's size if he would push him. As soon as the boy started towards him, Bobby jumped out of the swing and ran to me, crying. He wanted to try out the hand swings, but a girl was there and he wouldn't go near it.

This paper relates how speech came to a boy after five years of dependence upon grunts and gestures for communication. To learn speech after the speech readiness period has ended, usually occurring at three years, is no small task. The child had become convinced that he could not talk. He even appeared afraid of any speech noise that he found himself uttering.

Treatment

ABSOLUTELY no response was made by Bobby on his first visit to the office. He merely leaned against a chair and looked down his nose, occasionally looking out of the corner of his eyes to see if his mother or the clinician were watching him.

On Bobby's next visit to the office, an attempt was made to give the performance items in the Stanford-Binet intelligence test. To aid in gaining a certain amount of rapport, a Chinese checker board with bright marbles was placed on the table. The clinician tried to play the game with him, but no cooperation resulted. Consequently, the mother and the clinician started to talk about other subjects and gave no attention to the child at all. In a short time, he started to put a few marbles in the holes of the board.

With this start, the clinician felt encouraged. She took out some of the attractive objective tests from the Stanford-Binet set. In some instances where the child felt no social response was needed, he did complete the test. Enough was done to reveal that his intelligence was probably normal.

Something had to be done to give this boy a feeling of emotional security, a feeling of importance and a feeling of successful performance. He needed to have confidence in himself. Consequently, for several weeks, no attempt was made to secure speech responses. The clinician played with him and made him laugh. He was given opportunity to succeed in various activities. It was hoped that through play therapy Bobby could be stimulated to respond with speech.

In the office was a clown puppet, which the clinician operated for Bobby on his third visit. A block was given to Bobby to be used to throw at the puppet. This gave the boy great pleasure as he had some difficulty in catching the c l o w n. He laughed heartily. His mother indicated that he seldom laughed at home.

A 'Charley McCarthy' doll who opened his mouth was used to effect some stimulation toward talking, but this procedure evidently reminded the boy that he could not talk, so he became shy again. 'Charley' had been used successfully with other children who were hesitant about talking.

During all of these exercises, emotional release was the ultimate goal. The child, it was hoped, could talk if he forgot himself long enough. His mother had indicated in earlier interviews that he had been known to say a group of words on two different occasions—but this was rather doubted as later attempts at talking revealed that Bobby had to learn to say each of the sounds. However, as Bobby became emotionally released, his speech developed rapidly.

On Bobby's fourth visit, the mother remained in the reception room. Bobby screamed heartily and had to be carried to the place of treatment. He cried and whined for awhile. He sat on the floor and was very indifferent about everything. The clinician threw a small ball (made from crushing paper) several times at a stuffed toy dog. It seemed that Bobby did not know how to play. After some encouragement he knocked the dog over several times. After getting started he enjoyed his task and laughed. This

new success seemed to add to Bobby's feeling of importance.

At the following meeting, Bobby came upstairs to the regular room all by himself and with a smile on his face. He walked like a little man. He had been prepared for this. His mother wrote in the little notebook which was used for the daily written conversations in order that Bobby did not hear his problems discussed:

Monday evening, just after dinner, I told Bobby we were going to see Dr. Beckey tonight.

He smiled and said, 'uhuh.'

I said, 'You are not going to cry tonight and have the man carry you upstairs again, are you? You are going to be a big boy and walk right up the stairs all by yourself, aren't you?'

He answered, 'uhuh.' And he did.

The mother also indicated in the notebook that she had made it plain to him that she would be waiting for him downstairs.

TO ADD to this feeling of security and success, familiar activities were performed at the beginning of the period. The marbles were put on the board successfully. Then the toy dog was knocked over several times. The new task for this day which started so well with Bobby's coming to the office by himself was the blowing over of nine 'paper airplanes' (these were in reality only small folds of paper put on the table where he could blow them). He liked doing this.

Pictures mounted on colored cardboard were hidden about the room. As each picture was named, Bobby found the picture and brought it to the clinician. About 20 pictures were used. Bobby liked this simple game and cooperated very well.

The last exercise for this unusually good day was play with some new puppets which Bobby had not seen. He was very much amused. At this time, it was felt that each time the boy laughed he was approaching emotional release and speech. He certainly needed to let go of his pent-up emotions.

At this same time the mother had written in the notebook, 'I have told them all, that come in contact with Bobby often, to disregard his grunts. Although we often forgot ourselves, Bobby is a bit puzzled by it all.' The family cooperated very well. The father also came for an interview.

After the first four or five meetings with Bobby, the mother was presented with a note explaining two tasks for her to do at home. One was to collect five situations daily in which she pretended not to understand Bobby if he used gestures without speech. The other situation was for her to shut her eyes and offer Bobby something he wanted and to record his response.

As a result of the assignments given to the mother she brought the following conversations to the office:

I showed Bobby some ice-cream and asked him if he would like to have some. I closed my eyes.

He answered, 'Uhuh.'

I said, 'Are you sure you would like to have some?'

He answered 'Uhuh,' and he took it out of my hand.

Another conversation between Bobby and his mother also recorded by the mother, revealed this:

Bobby: Mama (his only word).

Mother: What is it, Bobby?

Bobby: Uh (pulling at refrigerator handle).

Mother: What is it you want?

Bobby: Aah.

Mother: I don't know what you want.

Bobby: Aah (when he saw mother wasn't going to respond he walked away).

This type of thing was being done at home to impress Bobby with the need for speech.

About this time, Bobby was beginning to wonder about the change that had come over his mother since she was no longer the understanding person she once was. He surely must have thought something about the need for speaking, although he never became irritated as many children in similar situations would have been.

Although the mother had become quite nervous and irritable with Bobby because of his inability to talk, she was now making an earnest effort to be patient and understanding with him, even though Bobby felt that he had lost his most understanding ally.

In the next conversation, he began to show irritation with his mother's continued attempt to misunderstand his efforts at communication:

Bobby: Mama, mama.
Mother: Yes, Bobby.
Bobby: Aah, aah (very excitedly).
Mother: Yes, Bobby, what is it?
Bobby: Aah (and points toward the street).
Mother: I don't know what you mean. Tell me.
Bobby: Aah (gets louder and a little angry, and points toward the street).
Mother: I am sorry, but I don't know what you are trying to tell me.
Bobby: Aah. (and runs outside to show me the Yummy Boy. When I do not follow he comes back and continues with his 'aah.' He finally gets disgusted and leaves.)

Another time:

Bobby: Mama, mama.
Mother: Yes, Bobby, what is it?
Bobby: Aah (points to shoes).
Mother: What do you want?
Bobby: Aah (louder).
Mother: Will you tell me what it is you wish?
Bobby: Aah (points to shoes again and decides to finish lacing them himself).

IN THESE conversations, it can be seen that Bobby's spoken conversation was limited to 'mama, aah, uhuh, and uh'. His added gestures and actions might be compared to an intelligent animal who understood everything but could not talk. Mother was instructed to continue playing her part in such a way as not to irritate the boy.

At the seventh meeting, small stars were used as rewards for successful achievements. This made Bobby feel proud when he earned one. At this meeting, he was left alone to perform all of the old familiar tasks successfully. He did much on his own initiative, even to making the paper ball. He played airplanes again. He was developing lung power, even though he still was not ready for any direct speech responses.

The clinician wrote in the notebook to the mother, 'Why don't you find some little task at home that he can do all by himself each day. Something to help you. Say to him, "Bobby, you are a big boy now, so mother wants you to help her." After he does the job, praise him.'

The following note was also written at this time, 'Ignore his inability to speak. Simply be less ready to do things for him when he grunts. Let him do it for himself if he finds you don't understand. Let me know what tasks you are giving Bobby to do.'

At each meeting, Bobby was given blocks to throw at the clown puppet and a paper ball to throw at the toy dog with the objective in mind that Bobby needed to be mean or rough to something.

The mother reported that she gave Bobby some jobs. He helped her to make up his bed. He emptied the ash trays and waste basket and agreed to do these little jobs each morning. He did these jobs without any persuasion and was well pleased with himself.

She wrote in the book, 'Later I scrubbed the kitchen (or rather started to) and Bobby insisted on doing it himself. He took the chairs out of the kitchen and brought them back.'

On the eighth meeting day, the clinician dared to try for a first speech response, based on earlier successful blowing responses with the paper windmills. Bobby was told to watch the clinician while she blew the paper windmills on the floor using the *p* sound. He was uninterested at first, but when the clinician appeared not to notice him for several minutes Bobby blew a paper airplane over with *p* sound. His first step was made toward learning how to talk.

The first picture and word to appear in his notebook was *pipe* with *p-p-p*. Bobby earned a star for blowing down seven airplanes with *puh*.

Puppy was soon added to the *p* words and pictures. Of course, he did not say the words, but he was beginning to associate the *p* sound with words beginning with the initial *p*.

On the following days, other voiceless consonants such as *t, th,* and *f* were used successfully to blow over the paper airplanes.

Although Bobby was cooperating in saying voiceless consonants when not too much attention was attracted to his using the sounds as social responses, the clinician was wondering how soon he would begin making voiced sounds. He could make sounds, especially *m* as he always said *mama,* but getting him to say it as a speech sound was quite another thing. However, at the fourteenth meeting, both the sounds of *oo* and *m* were obtained while playing with the clown puppet. Every time Bobby hit the puppet he said *oo.* Then he tried *m.* This type of response worked quite successfully as Bobby was not yet conscious of the sounds being used for speech.

On Bobby's twentieth session, the following sounds and combinations were said successfully: *p, f, th, t, m, ah, ee,* and *fee, fie, fo, foo, f-oo-t, ma-ma,* and *poo.* For the first time *sh* and *eye* sounds were made. Words such as *foot, mama,* and *fish* could be said by saying each sound slowly. Each response was rewarded with a star. Bobby was so pleased with what he was doing that he would jump up and down on his little seat after each success. His pent-up tensions were being released.

About this time Bobby was taken to the zoo. He showed interest in everything, but made no attempt to talk. His experiences at the amusement park were pleasant. His mother wrote in the notebook about this trip, 'I am really surprised at how he lets go now. That has helped him very much to enjoy himself with others.'

At the twenty-second meeting date, Bobby said these words sound by sound in each word quite well, but he still needed stimulation: *papa, mama, pie, shoe, ball, baby, puppy, pipe, moon, baa, pee, eye, meat.*

At the end of the third month after Bobby first came to the office, speech instruction began in a systematic manner since Bobby was cooperating very well. Bobby's vocabulary at this time included twenty words well said, including: *papa, mama, pie, shoe, ball* (not much *l*), *baby, puppy, pipe, moon, baa, baa, pee, eye, bo peep, bye bye, boat, five, pepper, apple, bee, and foot.* He was now a much happier boy than during the early weeks of his training. The big event which took place in his speech life about this time was the saying of *puppy* to another person. He was very shy about this and hung his head, but it was his first attempt to let another person know that he could talk. Soon after this, he repeated the learned sounds to his mother. This, indeed, was progress for him!

However, a warning was written in the notebook to the mother: 'Don't urge him too much at home yet . . . he's just gaining his confidence here. He's not used to hearing himself say things. He can say other words, but they must be sounded out slowly by letters. We have his cooperation now and that is what counts.'

AT THIS TIME, the mother was encouraged to take Bobby to Sunday School to help him to become adjusted to other children. Bobby needed to be with other children; however, his extreme fear of them made the clinician cautious about placing him all at once in a large group of children. It has been recorded that such a procedure may result in further retardation of the child's progress. Bobby's first visit to the Sunday School was carefully handled and he responded favorably although he made no attempt at speech.

The mother wrote in the notebook: Today I took Bobby to Sunday School.

There were with me four other youngsters ranging from 3 to 9 years of age. When the children all entered the building I looked around for Bobby. He was with them and went on in without saying a word. (This occurred about three weeks later than the park scene.) I thought it best that I shouldn't go in since he was showing so much initiative. When the class was almost over I went in. Bobby didn't see me. He was playing with crayons and looking all around while the others sang songs. He enjoyed himself and wanted to go back again.

He needed to be placed in a day school, but since Columbus had no kindergarten the problem was to find another type of school. Finally a nursery school operated by the Community Fund consented to take the speechless child. He started to this kindergarten on September 20, which was the following day after the Sunday School experience.

Bobby began to practice speech lessons with his mother at home. At this time Bobby was saying spontaneously at home: *oats, cocoa, cracker, pants, candy, swing, Harold, Ernie.* He was also trying to repeat everything his mother asked him to say. He not only was cooperating, but his ears seemed to be more alert to speech sounds and words.

His mother wrote in the book: 'Bobby repeats many words he picks up from our conversations. He also has started to hum along when we sing, and now and then repeats a word of the song.'

When the clinician began work on the *s* sound, the usual procedure was followed, but Bobby had a spell of shyness and hung his head . . . and refused to do anything. For a moment he returned to his feeling of insecurity where speech was concerned. Instead of pressing the situation, another activity was begun and the *s* was not mentioned again until the next meeting when all went well again.

According to the Haggerty-Olson-Wickman Behavior Rating Schedules, Bobby fell below only in the section on behavior problems. In Schedule B, his intellectual and physical ratings were about normal. Socially, he was in the 91st percentile and emotionally he was in 93rd percentile. This information was evidenced in Bobby's daily activities.

At the end of Bobby's fourth month of training, he was encouraged to say things about the house. His mother was instructed to say 'water' whenever Bobby drank any water. This type of procedure at this time usually prompted Bobby to repeat the word. Bobby was saying 'nope' a great deal. One day about this time, while his mother was driving the car, Bobby saw a box in the road. His mother heard his first spontaneous speech, 'Hey, wa (tch) ou (t).' He called his sister, 'baby.' Bobby was beginning to talk!

Bobby responded readily with answers to the following questions: How old are you? What's your name? Who brings you here? Who goes to work in the morning? What do you comb your hair with? What's this (show book)? What do you do with peas (show dish of peas)? What buzzes?

On November 29, Bobby brought the picture of a turkey to the office. The clinician asked him what he had. He replied, 'Turkey.' He was asked what he had for Thanksgiving dinner. He replied, 'Turkey.' At this time his spontaneous words at home were *up-town, toys, suit, sailor, cold, turkey, chicken, farm, hunting, Johnny, oh baloney, show, home, rabbit, eat, bread, butter, jelly, gun, high, Beckey, me too, Linda, cut, you, ready go, bud, and kitchen.*

According to a note from the mother, 'Bobby's teacher (at kindergarten) says he speaks to her, but most of the time she doesn't understand him until he uses gestures. There are times when we don't understand his words after he repeats them three or four times. Most of the time he makes himself clear.'

He replied spontaneously to questions using these words as answers:

cradle, boy, cap, cow, bud, puppy, coloring, house, read, window, chicken, bears, horse, circus. His spontaneous words without stimulation during this speech session were *blue, see,* and *black.* He enjoyed saying *black* very much. He said it very plainly, too. He also said 'okay', 'yes sir', and 'black horse', the first grouping of words he had used spontaneously. As he looked through his picture book, he responded with no promptings: 'duck, fish, pig, bunny, puppy, chicken, cake, and rabbit.'.

On December 6, Bobby's new words said spontaneously at home were *Santa, me, face, window, paper, paste, goodnight, mickey mouse, mouse, squeak, pumpkin, goat, Ellen, Tottie, backdoor.* On each day Bobby was rapidly adding new words. On December 15, he was putting words together. He said,

Santa Claus like it. Good boy, Who pushed me? Yes, sir, you pushed me. . . Santa Claus sleeping, North Pole. Make lots toys—tired. . . Mommy, what do with this? Mom, look. . . Mommy, clean up. Good boy. . . No mail today. . . Daddy make airplanes. Mom, long time make it. . . What's this? Santa Claus bring toys, candy. Fill stocking. . . Come down chimney, hey, listen. . . Blocks fly, Mommy, iron handkerchiefs. . . Mom, lookee, big house. Daddy make it. Big house, enough bricks. . . Talk, loud, hurt ears. . . Pocket, marble in it. Santa Claus leave it. . . Mom, picture show, see. See funnies. . . Mommy eat. Toast sandwich. . . Nice Donald Duck. . . Slippery, not ice. Fall hard. . . Funny hats . . . horn. Give party hear bells. New Year's Day.

Bobby was not seen in the office again until after Christmas, which was a great occasion for the little fellow now that he had found speech. He was a much happier boy than he had ever been. His mother wrote in the notebook January 1:

'Bobby continually asks "why" to everything I tell him just as I have heard every other child do. This pleases me very much. We can carry on a conversation for quite some time. Bobby doesn't stop asking questions until everything has been explained satisfactorily. Some of our discussions he repeats to his daddy.

'He is also trying to make conversation with other children and talks to some by telephone. We are so happy about his progress, and to use the expression of my father, "Bobby's talking is the finest Christmas present of all".'

Bobby was encouraged to increase his vocabulary. He was not seen so often in the office as he was developing speech rapidly. During February, which was about eight months after his first trip to the speech office it was difficult to estimate his speech vocabulary.

On February 15, Bobby was given a Stanford-Binet intelligence test and he made a score of 106, which gave evidence of his normality in mentality.

At his last session in March, he was saying spontaneously:

Take my coat off. . . Now turn the page! That's what my Daddy makes. . . Out at Curtiss-Wright. . . Give me another book. . . Where do you put them? What kind of pictures? My dad got it for me. . . They fit me. . . I want outside too. . . I'll put it in this. . . This stuff won't stick.

Reference

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News and Announcements

Miriam D. Pauls, Editor*

The semi-annual meeting of the Committee on the Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology was held in Chicago, May 26, 1946. The Committee has been working on a manual for the fitting of hearing aids, and a preliminary report will appear in the *Transactions* in the near future. The detailed monograph will be published later. A motion picture on the prevention of deafness is under preparation. It will be the second of a series that will be available to educational groups. Of particular interest is a communication to be sent to state medical men outlining ways of stimulating interest in and promoting aural rehabilitation throughout the country. A study of methods of recording audiometric findings has been made, and suggested recommendations to facilitate uniform recording of data for clinical and publication purposes has been approved by the committee. This report will appear in the *Transactions.*

The annual meeting of the American Academy of Ophthalmology and Otolaryngology will be held in Chicago, October 13-18, 1946. The program for the Scientific Section will include the following:

'Industrial Acoustic Trauma,' by Dr. D. A. McCoy; 'Fitting of Hearing Aids,' by Dr. R. Carhart and Lt. (jg) Eva Thompson; 'Public School Hearing Program and Demonstration,' by Dr. C. E. Kinney; and a contest to demonstrate the lipreading skill of two deafened veterans will be staged by Mr. H. Carter and Dr. H. Westlake.

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The School of Speech, Northwestern University, is expanding its clinical services in audiology, hearing aid selection, detailed educational evaluation and training in lipreading, auditory training and speech development. Plans for the immediate future include setting up a similar service in conjunction with the Medical School.

Dr. George Shambaugh, Medical School, Northwestern University, is collaborating closely with the research program. Among the research problems being investigated is the problem of psychogenic deafness and pre- and post-operative testing of cases having the fenestration operation.

The American Associaton to Promote the Teaching of Speech to the Deaf held its fifty-sixth annual summer meeting in New York, June 24-28. It was the first convention since 1940 and was well attended. There were a number of very interesting panel discussions during each morning session. Miss Mary C. New, Assistant Principal, Lexington Avenue School, and Dr. Arnold Gessell, Yale University Child Development Clinic, discussed the development of infants and young children; Dr. Clarence V. Hudgins, Psycho-Acoustic Laboratory, Harvard, Mr. Fred C. Numbers, Western Pennsylvania School, Miss Jane Shover, National Society for Crippled Children and Adults, and Dr. Gordon E. Peterson, Bell Telephone Laboratory, considered factors that influence the intelligibility of speech of the deaf. Still another group led by Dr. S. Richard Silverman outlined developments in hearing aids. Later in the week Dr. Jean Utley led a discussion that attempted the diagnosis of factors involved in the teach-

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Training and Certification Of Speech Correctionists

Severina E. Nelson*

Problems Involved in Teacher Training

THE key question in a teacher-training program for speech correctionists is: Should one train technicians in four years, sacrificing some cultural study, or should one train students for a cultural background for four years with a fifth year of specialization? The term 'technician' is used in its broadest meaning. Inasmuch as the speech correctionist is dealing with a variable—the individual—and not with specific speech defects, there must be specialization in the understanding of the individual, as well as knowledge of the various types of speech disorders, their symptomotology and therapy. It is evident to many speech pathologists that the student who follows the 4-year general speech major—usually with emphasis on the theatre arts—is not basically prepared in psychology and physiology for speech correction. This student will often drift into a beginning correction course in his senior year, and is definitely unhappy when he finds at the end of the first semester of his senior year that he wants to enter this area of specialization. Perhaps he is not able to continue for a fifth year without a year to recuperate financially, and if he can afford to go on, he is not eligible for admission to many graduate courses because of undergraduate omissions.

The first related question which arises in this matter of training is: what standards of specialization do institutions provide for teacher-training programs in speech correction? It is true that standards are inherent in a program and cannot be judged by credits and names of courses. Much depends on teaching personnel and content of courses which may vary widely. One of the ways of evaluating a program is by the performance of the certified speech correctionists. However, there must be an objective standardization which can be measured by hours and names of courses. Another related question in regard to teacher-training involves the problem of state certification and state financial support. Can training institutions within the state depend on the state office of public instruction to provide requirements as high as those offered by the institutions, or do the institutions merely try to meet the certification required by the state? Or is state certification necessary for the stimulation of interest in speech correction and for professional growth?

Evaluation of Data from Questionnaire

A QUESTIONNAIRE, sent to institutions offering courses in speech correction, included the following questions: (1) Are basic and specialized courses arranged in a 4-year planned program? (2) Are speech correction courses dove-tailed in with the regular university program chosen by the student under advisership of the faculty? (3) What college administers the program? (4) What technical subjects in speech are considered important for training

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teachers in this field? (5) What subjects may be selected for a minor? (6) How many semester hours are required for a major; a minor? (7) Does the institution offer graduate study, including the M.A., M.S., M.E., and Ph.D. degrees? (8) What is the present enrollment of speech correctionists? (9) What problems have arisen in arranging a training program? Each director was asked to include a curriculum in order that the courses in specialization could be studied in relation to the general university course.

The collection of data on speech correction programs in colleges and universities given in this report is not complete. Several questionnaires sent to well-known training institutions were not answered. Moreover, it will be necessary, in order to get the complete perspective, to study the speech program as related to the university curriculum. Inasmuch as only one curriculum was received, that study could not be undertaken at this time.

Curricula Offered by Training Institutions

It would seem that many problems in the educational training of speech correctionists stem from the main issue of whether the traditional curriculum of the liberal arts should be maintained. There are some who believe that a 4-year specialized curriculum with a systematic arrangement of courses can be devised to meet cer-

TABLE I. Group A. Technical speech subjects required in 4-year planned curricula.

Institution	*Brig. Young Uni.*	*U. of Denver*	*U. of Illinois*	*Michigan St. Coll.*	*U. of Minnesota*	*Ohio U.*	*Brooklyn College*	*Grinnell College*
Administered by College of	Fine Arts	Arts & Sci.	LAS	Arts & Sci.	Education	Fine Arts	Lib. Arts	Lib. Arts
Voice Training	2		1	4*	*	2	Desirable 2	
Fund. of Speech Interpretation	6 Arg. 3 Bod. Mov. 4	5 5 Theatre 5	3 2	4 2 Story Tell. 2	6	1	Desirable 2	4 Disc. 4 Theatre 8 Arg. 4 P. Sp. 4
Phonetics	6		3	4	2	3	2	4
Phys. of Voc. Mech.; Anatomy			3					
Sp. Science	4	5	3	2	6	6	6	
Sp. Pathology *Sp. Correction*	5	10	6	2	6	3 3	3	8
Clin. Practice	5 Methods 3	10	6 Methods 3	9½	6		3	
Clin. Hrs. (Minimum)		160	200		290	208	108	150
Lip Reading			3 Sp.for Df. 3			3		
Audiometry			3					
†*Psych. of Sp.*	5	5		2	2			
Minor	Psych; Phys; English	Biol;Psych; Child Psych.	Note	Soc.Studies Eng; Speech	None	English	None	
Credit Hrs. in *Major* *Minor*	43 plus basic- 60 20–26	45 25	36	26¾ 2 min 15½ each	28 in Sp. 64 None	20 12	24	24 16
Enroll. '45-'46 *Undergrad.* *M.A.-M.S.* *Ph.D.*	12 4 not offered	12 15 5	42 10 not offered	42 2 not offered	4 4 1	10 2 not offered	21 0 not offered	15 not offered

*Quarter hours estimated in semester hours.
†Courses are often named differently, but seem to include this content.

tain cultural needs as well as provide technical training. (Table 1, Group A.) There are others who believe it is possible to keep the traditional curriculum intact, and to integrate or superimpose a professional course of study with the traditional university course. (Table 2, Group B.) There are those who think it is better to arrange a 5-year program, thus providing for the traditional liberal program and a certain amount of specialization in four years with an additional year of specialization. (Table 3, Group

TABLE II. GROUP B. Technical speech subjects required in regular university curricula.

Institution	*U. of Fla.*	*U. of Iowa*	*Marquette U.*	*U. of Maryland*	*U. of Nebraska*	*Northwestern*
Admin. by College of	Arts & Sci.	Lib. Arts	Lib. Arts.	Arts & Sci.	Education	School of Speech
Voice Training	3	6		3		2⅔
Fund. of Speech Interpretation	3 3	3 Theatre 3		4		8 Theatre 2⅔
Phonetics	3	6	2	3		2⅔
Phys. of Vocal Mech.; Anatomy		3		8		2⅔
Speech Science	3		2	3		⅔
Speech Pathology *Speech Correction*	6	6 9	2 4 & 2 (Meth)	6	6 3	5⅓
Clinical Practice		CP with above 9	6	3	Methods-2-3 Observ.-3	6⅔
Clinical Hrs. Required—Minimum	250		216	20	150	150
Lip Reading		3 with Clin. P. Sp. for Hd. of Hr.				2⅔
Audiometry	3	3 with Clin. P.				2⅔
Psych. of Sp. & Lang.		Semantics-3	Scien. backgrnd. 3 Sp.&Read.Prob. 2			
Minor	Psych; Soc; Eng; Biol.	None req; usually Psych.	Eng; Phys; Psych.	None	Ed. Psych; Speech	Psych.
Credit Hrs. in *Major* *Minor*	 24 12	24-40 major may be either in Psych. or Sp.	30	 24-40 12-20	 21 6	 53⅓-66⅔
Enroll. '45-'46 *Undergrad.* *M.A.-M.S.* *Ph.D.*	 3 1 not offered	 60 8 3-6	 9 0 not offered	 10 not offered not offered	 8 not offered not offered	 20 15 8

Institution	*Col. of Pacific*	*Rockford College*	*Syracuse U.*	*Bowling Green St. Uni.*	*U. of Oklahoma*	*Indiana St. T. C.*
Admin. by College of		Lib. Arts	Lib. Arts	Ed. & Lib. Arts	Arts & Sci.	Dept. of Sp. under Spec. Ed.
Voice Training			3	2 3		
Fund. of Speech Interpretation	3 2	6		3		2⅔*
Phonetics	2	3		3 (New)	3 Exp. Phon. 3	2⅔
Phys. of Vocal Mech.; Anatomy			3	3 (New)		2⅔
Speech Science		3	3	3 (New)		2⅔
Speech Pathology *Speech Correction*	2 2	3	6	2	6	5⅓
Clinical Practice	3	3	3	2	2	5⅓

TABLE II—(Continued)

Institution	*Col. of Pacific*	*Rockford College*	*Syracuse U.*	*Bowling Green St. U.*	*U. of Oklahoma*	*Indiana St. T. C.*
Clinical Hrs. Required—Minimum		150	120	70	Student works with 3-6 cases for entire year	200
Lip Reading		Acoust. Handicap. Child-3		3	Hearing-3 (Rec.)	
Audiometry					3	2⅔
Psych. of Sp. & Lang.	2 Semantics-2					
Minor	Psych; Eng; Biol.	Biol; Chem; Anat. Phys; Acoustics	Psych; Zool; Medicine	Psych; Eng. Soc.	Psych.	Hearing Therapy
Credit Hrs. in						for total maj. includ. Ed.
Major	34	24	24	45	24	34⅔
Minor		12	12	24	12	Sub. to choice
Enroll. '45-'46						
Undergrad.	10	12	6	12	10	30
M.A.-M.S.	4	not offered	4	not offered	2	1
Ph.D.	not offered	not offered	1	not offered	not offered	not offered

*Quarter hours estimated in semester hours.

C.) Many institutions offer fifth-year graduate programs which may or may not be taken with the 4-year programs offered in Group A and Group B. (Table 4, Group D.)

Replies also showed that there are institutions that offer a major in speech with emphasis on speech correction. These data will not be included because these programs cannot be truly called training programs. Operation under this classification will prove to anyone that such a program cannot have any degree of specialization in four years, but can provide a cultural background for a fifth year of specialization, provided that allied subjects have been chosen with care.

1. Planned 4-year curricula: Group A programs, administered mainly by the College of Liberal Arts, are difficult to plan unless certain Liberal Arts requirements are lessened or unless the College of Education is administering the program. To meet state requirements in Education and Liberal Arts requirements in language, social science, physical science, biological science, and English; and to arrange a sequence of speech correction courses—and then have 35 to 45 semester hours remaining for electives—is almost impossible within a 4-year period. The program is eased if no minor is required, or if the minor selected is either psychology or physiology. Most of the programs tabulated follow this plan for a minor. Some answers on questionnaires have indicated that if teachers are to be trained in a highly specialized area, the College of Education should govern the program, just as it administers other special education programs. In Group A one curriculum, that of the University of Minnesota, is administered by the College of Education; in Group B, programs of the University of Nebraska, Indiana State Teachers College, and Bowling Green College are administered by the College of Education; the remaining curricula are under Colleges of Liberal Arts and Sciences.

Notations by various directors indicate difficulties with requirements under both administrations: 'Our biggest problem is finding enough time in the student's program for the speech correction courses along with all of the other requirements in the College of Arts and Sciences.' . . .

TABLE III. GROUP C. Technical speech subjects required in 5-year curricula.

Institution	*University of Louisiana*	*Stanford University*	*Uni. of Wichita*	*U. of Wichita (continued)*	*Western Res. U.*
Administered by College of	Arts & Sci.	Speech	Education	5th yr. which is continued immediately after 4-yr.	Minor in Speech Cor. in Undergrad. Program. (Major Ed. Psych. or Eng.
Voice Training	Provide 4-yr. background in general speech before permitting specialization	6			
Fund. of Speech Interpretation		3 3			
Phonetics		3	2		3
Phys. of Vocal Mech.; Anatomy	5th year		3		3
Speech Science		3			
Speech Pathology Speech Correction	3 Diagnosis 2 6 Indiv. Prob. 6	10	6	Stutt-4; C.P.-4; Deaf & Hd-of-H.-4; Aphasia-4.	3
Clin. Practice	2	3	12	Sem. in Sp. Re-Ed 4 Sem. in Logopedics4	3
Clin. Hrs. Required—Minimum	220	100	1024	Thesis-5-10. 1 yr's. experience in field.	5th yr. prog. MA Sp. Path. Anatomy Clin. Sp. Cor. Clin. Tech. Pract. Cor. Prob. in H. of Hear. Lip Reading
Lip Reading					
Audiometry					
Psych. of Speech		3	3		
Minor	Psych.; Phys.; Ed.; Neurol.; Endocrinol.	Eng.; Ed.; Psych.	None required.		
Credit Hrs. in *Major* *Minor*		45 plus Thesis	26-B.A. (see next col. for 5th yr.)	30 hrs.	
Enroll. '45-'46 *Undergrad.* *MA.-M.S.* *Ph.D.*	 2 1	4 6 3	20		15 12

'lack of cooperation with the School of Education in the matter of credits, electives, personnel.' . . . 'lack of cooperation from the School of Education, if you can imagine it! We have not really developed speech correction in any true sense. Our program dates from 1941-42. The initiative has come from the Speech Department in the Arts and Science College. We hope to carry the light and develop a more sensible and tangible program.' 'No problems in particular, however, it would be advantageous to have a curriculum in our School of Education.' 'The Education College wants to substitute too many inefficient methods courses. Teacher-training clears the state in the Education department.' 'Unless the College of Education understands that clinical practice is practice teaching. the student will be doing a hop-scotch sort of a job between the College of Education which usually directs practice teaching in the classroom and the College of Liberal Arts which offers clinical speech practice.'

Since Dr. Bryngelson was the only director who included a complete curriculum, the requirements should be noted. In the freshman and sophomore years the student at the University of Minnesota is requred to take Biology, 6[1]; Composition, 4; General Psychology, 4; Fundamentals of Speech, 6; Laboratory Psychology, 3; Comparative Anatomy, 4; Physiology, 3; Language, 10; Sciences (other than those mentioned), 7. The total is 47 semester hours out of a required total of 60 hours, leaving 13 for electives. In the junior and senior years, the student transfers to the

[1]Semester hours estimated from quarter hours.

College of Education, and takes the Speech courses listed in Table 1; in addition, the following courses are required: Abnormal Psychology 2; Statistics, 2; Individual Mental Tests, 3; Genetic Psychology, 2; Child Psychology, 2; Adolescent Psychology, 2, which give a total of 43 hours out of a required 60 semester hours, leaving 17 hours for electives. The clinical work is done mainly in the school system, with each student spending 580 clinical hours, approximately 300 of which are teaching hours.

In contrast, the Speech Clinic at the University of Illinois has been attempting for a short time to meet the requirements of the College of Liberal Arts and Sciences, state requirements on Professional Education, Political Science, and History, a secondary teaching minor, and speech correction requirements. Under this procedure, there are fifteen hours or less of electives, unless certain courses in Psychology, Physiology, and Education are omitted. Since a secondary teaching minor is urged, the students are choosing mainly English, Language, and History. The technical part of the program does not begin until the junior year. Although the program is too rigid, the students seem grateful for the direction and orderliness which accompany a 4-year planned program.

A curriculum is being planned at the present time to meet the proposed requirements of the Limited State Certificate for Teachers of Exceptional Children which specifies the following courses:

TABLE IV. GROUP D. 5th year programs.

These programs vary with previous training and major interests of students.	*U. of Ia.**	*U. of Illinois*	*U. of Minn.**	*Northwestern U.**
*U. of Denver**	MA (30 s.h.)	MS (8 units or 32 s.h.)	MS	MA
MA	Required	Required—	Choice of following:	Required:
Brigham Young	Anat. of Ear & Voc. Mech.....3 s.h.	1. 4 units in Sp. Path & Cor:	Adv. Sp. Prob.....6	Int. to Grad. Study
MA-MS	Acoustics .....3 s.h.	Seminar in Sp. Cor. –2 units	Voice Science.....6	Sem. in Sp. Path.
Brooklyn College	Statistics .....3-6 s.h.	Diagnosis of Sp. Disorders.....1	Exper. Phon.....3	Electives:
MA	Exper. Phonetics..3-6	Research.....1	Sem. in Sp. Path. 6	Anat.& Phys. of Voc. Mech...4q.h.
Ind. St. Teach. Col.	Sem.in Sp.Path. 2 s.h.	2. 2 units required in Ed.:	Psych. of Individ. Diff.....6	Exper. Phon...4q.h.
MA-MS	Research in Sp. Path. .....arranged	Adv. Ed. Psych...1	Human Behavior.....3	Hearing Test..4q.h.
*Louisiana U.**	Electives	Phil. of Ed.....1	Human Organism 3	Teach. of Sp. Reading .....4q.h.
MA	Neuropsychology	3. 2 units elected from:*	Genetics.....3	Hearing Aids..4q.h.
Mich. S. C.	Sp. Cor. for Pre-School Child	Adv. Mammalian 1	Embryology.....6	Prob. in Voice Sci. .....4q.h.
MA	Adv. Clin. Pract...3 or more	Endocrinology.....1	Research.....6	Prob. in H. of Hear. & Df. 4q.h.
Ohio U.	Teach. of Remedial Reading.....6 s.h.	Psych. of Excep. Child 1	His. of Sci.....6	Clin. & Sch. Proced. in Sp. Re-ed..4q.h.
MA	Methods of Teach. Sp.....3 s.h.	Neural theory of Psych. Func. 1	* * * *	* * *
U. of Oklahoma	* * *	Diag. & Remed. Prog. in Sch.....1	*C. of Pacific*	*Syracuse U.**
MA	*U. of Florida*	Research-Sp. Path.....1	MA	MA-MS
Purdue University	MA	Sem. in Voice Sci. 1	Sp. Path.....2	Theory of Stutt.
ME-MS	Sem. in Hearing	Medical Lectures..1	Ab. Psych.....2	Sp. Pathology
* * *	Sem. in Stutter.	Psych. Lectures....1	Ment. Hygiene.....2	Electives:
Kansas St. T. C.	Applied Phonetics	Ed. of Hand'ped 1	Semantics.....2	Anatomy
MS in Ed.	Adv. Sp. Cor.	Ed. Measurements1	Clinic	Physiology
Nebraska U.	Experimental Prob.	Clinical Psych.....1	Prob. in Sp. Thesis	Clin. Psych.
MA in Ed. Psych. with Prob. in Sp. Path.	Thesis	Genet. Psych. for Teachers.....1	* * * *	Statistics
U. of Missouri		Audiometry.....½	*Marquette U.*	
MA in Sp. with emphasis on Sp. Cor.		Sp. for the Deaf..½	MA	
		Genetics.....½	Sp. Pathology	
		Phys.ofDevel'p't 1	Voice Science	
		Prob. in Motivation.....1	Adv. Sp. Cor.	
		*Under special circumstances, other courses may be substituted with approval of adviser.	Psych. of Sp. Prob.	

*PhD. offered.

1. General Education, (44 Semester Hours)
   a. English 8
   b. Natural Science to include 6 s.h of Biological Science 12
   c. Social Science 12
   d. Humanities 6
   e. Health and Physical Education 2-4
   f. Additional Work in any of above areas 4
2. Specialization including Education, Psychology, and related areas, (45 Semester Hours)
   a. The American Educational System 2-3
   b. Educational Psychology 2-3
   c. Guidance, including Tests and Measurements[2] 3-4
   d. Education of Exceptional Children 2
   e. Child Psychology, including Psychology of Exceptional Children and Mental Hygiene 6-9
   f. Technical courses in special field including basic and clinical reading methods 12-18
   g. Physiology and Anatomy (with emphasis on the special field) 3
   h. Related areas, such as Crafts and Arts, Recreation, and Home Arts 4-6
   i. Student teaching in field of specialization[3] 5
   j. Additional work in any above areas 6
3. Electives (31 Semester Hours) (May also be selected as additional work under 1 and 2)

2. Regular university curricula: the programs listed under Group B (Table 2) present as strong a training picture as those classified under Group A as far as the technical courses in speech are concerned. Group B seems to be meeting the same speech requirements as Group A. Differences are not too apparent in the semester hours for majors and minors. An average of major hours in each group is about 30 semester hours. Dr. Mildred Berry, Rockford College, writes, 'We are working towards a fifth year for speech correctionists because we do not wish to sacrifice the liberal arts background which we consider essential for our students. I believe English literature, German, Greek, History, etc., are essential. In other words, I am 'agin' the training of technicians.'[4]

A letter from Dr. Johnson, University of Iowa, explains the general procedure there:

> As freshmen, there are a few students who have already decided, at least tentatively, to concentrate in the area of speech correction. Such students and others who decide on a major at a later time, are advised to take biology as their science and, if possible, to take some courses in mathematics and either physics or chemistry. They are also advised to take one of the courses in genetics which are offered in the departments of zoology and botany. All freshmen take a comprehensive communication skills course unless they pass examinations exempting them, in which case they go ahead immediately to other courses in speech and English. Foreign language is another requirement and we advise speech correction majors to take spoken language rather than a reading course. Speech correction students major either in the department of speech or in the department of psychology. Regardless of the department in which they major, they take, in addition to the basic communication skills work in speech and English, an introductory course in psychology, the second semester of which covers the psychology of adjustment. They also take the courses required for a teaching certificate, which include educational psychology. Practically all of them also take an elementary course in experimental psychology. They take a 6-hour course in voice and phonetics and if they elect a major in the department of speech, they also take public discussion and debate, dramatic interpretation, and an introductory course in the theatre. The regular speech pathology program is superimposed upon these fundamentals.

Dr. Clarence Simon of Northwestern University adds this note to his questionnaire:

> At the present time we are in the midst of revising somewhat our requirements for the bachelor's degree. Our revision is pro-

[2]Tests and measurements to include mental, aptitude, social, and emotional maturity measurements.

[3]In the fields of the socially maladjusted and speech correction, supervised practice in approved psychological and speech clinics may be substituted: 200 clock hours in psychological clinic; 200 clock hours in actual speech correction.

[4]The 5-year program would be on the undergraduate level.

ceeding in the direction of allowing students a greater level of specialization. When this is completed, our Re-Education students will be allowed much heavier electives in Psychology and the Sciences than we have been able to give them in the past. They also probably will be held for fewer hours in the speech arts than have pertained to date.

According to Dr. Simon, the greatest difficulty occurs when the student makes his election too late in his college career.

3. 5-year curricula: Group C, Table 3, includes curricula organized on a 5-year plan, with no certification for speech correction until the end of the fifth year. Since these institutions are pioneering with a plan which calls for presumably higher standards, a comparison is in order. Dr. Jeanette Anderson, Louisiana State University, believes it is essential to provide a broad background in general speech before permitting specialization in any one field; she has found it 'difficult to adapt a general program of courses to the specific needs of each individual.' Certainly, if the Louisiana program has a carefully planned undergraduate program in sciences, the graduate minor in psychology, neurology, endocrinology, will provide excellent background for the graduate major.

Stanford University has almost completely adopted the 5-year plan and does not encourage undergraduates to certify at the end of four years. The major, which includes 45 hours of speech, has no courses in hearing or audiometry.

Western Reserve University has planned a 5-year program which is evidently the equivalent of other programs of this type, even though the undergraduate work indicates only a minor in specialization.

The University of Wichita requires 26 hours in Logopedics in the 4-year university course with 1024 clinical hours; then in the fifth year, offers courses that are obviously on the graduate level. The M.A. requires 30 semester hours and a thesis and one year's experience beyond the undergraduate course. This program is sound but is not too different from the thorough programs offered at other institutions, if one is assured a carefully planned fifth year of graduate study. However, Wichita does not certify until the end of the fifth year and no institution requires as many clinical hours. In a recent letter, Dr. Martin Palmer states that the Institute of Logopedics is planning 'considerable revision in its offerings.' The new plan will call for 'increased clinical experience as well as increased lecture materials, and will integrate these materials in a much more logical way.'

4. Fifth year graduate programs: those schools offering fifth year graduate programs, that is certificaton at the end of the fourth year and a fifth year if desired, are listed as Group D, Table 4. These programs do not lend themselves to tabulations because the patterns are quite flexible. The University of Denver, Brigham Young University, Brooklyn College, Michigan State College, Ohio University, and Purdue University listed no courses, but indicated that these programs vary according to the students' needs. This is sometimes true in graduate work, because of the variance in undergraduate curricula and because teachers often decide to enter this area after several years of teaching. Iowa, Florida, Illinois, Minnesota, Marquette, Northwestern, Syracuse Universities and the College of the Pacific show similar required and elective courses.

Enrollment of Speech Correctionists

The certification of speech correctionists only after a five-year program—undergraduate or graduate—brings up several problems which have to be met whether those training like it professionally or not: Will students be attracted to a program which includes five years of undergraduate study or a fifth year of graduate study

before certification? Will the salary be commensurate with the training period? Will fifth year graduate students go into school systems or will their egos yearn for the prestige of college and university positions?

There is a tremendous problem to be faced in the need of children in the school systems, a problem which must be met as effectively and efficiently as possible. If graduate students are being trained so that the merry-go-round of higher institutions can be kept revolving, then the ultimate goal of aiding the child in its immediate need is far removed from actual attainment. The figures showing present enrollment of prospective speech correctionists (from those institutions that answered) will never—even remotely—meet the need of the child with defective speech in the school system: 21 institutions are training approximately 336 undergraduates as speech correctionists which averages about 16 pupils per institution. Mortality is high these days, especially due to marriage, which has been taking about one-third of the graduates in some institutions; another one-third can be counted as enrolling in graduate programs and will take state supervisory positions, or be placed in an institution of higher learning, so it is doubtful whether more than one-third will seek positions in grade school systems. Nineteen institutions are training 116 students for the M.A. degree; seven offer graduate study for a doctorate with an enrollment of 25. Records from the University of Wisconsin, Michigan, and Pennsylvania which offer graduate programs, would increase these latter totals.

A total of 336 undergraduates is an exceedingly small number, about 100 more than the known speech correctionists who were certified by state offices this year. The number of M.A. students, 116, is approximately half of the undergraduate number. Unless these graduate students have had a year's experience in the field, they will have to meet the same problems of adjustment that the 4-year students meet, no matter how exacting the training period has been. One gratifying hope is that most good speech correctionists are anxious to pursue graduate study, especially after one year in the field. That experience is a steadying one, a year of adjustment, which in its fullest form can never be met in any institutional clinical training center, whether the program is four or five years.

State Certification

Replies from the 16 states that certify speech correctionists[5] as to the number of speech correctionists certified for the school year 1945-46 are vague and uncertain. One would question whether this uncertainty is due to the fact that so few wish to be certified, or to the indifference of the state offices in recognizing this area, or to the lack of funds to pay adequate remuneration. The small number certified could also mean that many who are trained are interested in graduate study and in university and college positions rather than a school-system program. One could also blame the war, as well as marriage.

1. Number Certified in 1945. Information sent from the state offices of public instruction shows a total of 227 known certifications. California, Indiana, Iowa, Kansas, Michigan, and Ohio had no record of those certified. Oregon and Virginia each certified 3; Minnesota, 4; Connecticut, 5; Nebraska, 6; Florida, 10; Pennsylvania, 25; Missouri, 30; Wisconsin, 55; Illinois, 86, outside of Chicago. Illinois has made a phenomenal jump from 1943-44, when three speech correctionists outside of Chicago were certified; in 1944-45, 16 were recognized.

[5]For a relatively complete and up-to-date statement concerning state certification of speech correctionists, see Carrell, James. A. State certification of speech correctionists, *Journal of Speech Disorders* 1945, **91-95**.

The impetus has come from the state office in Springfield. Superintendent Ray Graham, Director of the Education of the Exceptional Child, has educated principals and superintendents and teachers. The Division of Services for Crippled Children formerly under the direction of Lawrence Linck, assisted by Jayne Shover, and more recently under the direction of Dr. Herbert Kobes, assisted by Jeannette Frazier and Bette Rae Bartell, has demonstrated, by means of diagnostic clinics, the need to parents and school officials. And the legislators have provided an increased budget so that school boards can be reimbursed by the state.[6] This is one example of what state support can do in the promotion of a correction program. Needless to say, university officials can be convinced there is a need when state support is strong.

2. State Requirements. Standards should be kept satisfactorily high, not only by institutions but also by the state. Officials of the state should be educated to recognize that speech correction is education and an integral part of the state's educational system. The institution in turn should try to meet the clinical membership requirements of ASCA for its minimum standard. Furthermore, if the state understands the problems involved in this area of training, it will be more willing to pay for the specialization. Some may call this statement unprofessional and mercenary, but it is intended merely as a practical one. Teacher interest will undoubtedly be negligible unless there is a known financial support. A firmly established state rapport will exist if the people of the state have been educated, if the requirements for certification are acceptable, and if certain enterprising individuals are willing to educate legislators. Almost every institution listed in this report requires more semester hours in specialization than the state does.[7] If the policy of few semester hours for certification is followed to permit institutions with few courses in this area to certify its graduates, then the state is not cognizant of the many training problems involved. This difficulty is further increased by the fact that school officials, many times, are interested only in whether the candidate meets state requirements rather than the requirements of an institution. This practice provides many loopholes for the inadequately trained correctionist.

State requirements are known to be consistently low,[8] except in the case of Kansas, where the University of Wichita controls requirements (according to the state office), and in the case of Ohio, which provides three types of certificates, depending on training and length of successful service: Provisional, professional, and permanent. Thus far, Ohio is the only state which has outlined a complete 4-year curriculum in its speech correction requirements. One can prophesy that the state officials have set an example that will make other states review their requirements. Certainly the certificates as outlined by Ohio should indicate strong state support and should give additional professional dignity to the field. These requirements follow:

SPECIAL CERTIFICATES in Speech Correction and Hearing Therapy
Tentative Requirements,
State of Ohio:

I. Scope of Service:

The speech and hearing specialist may function on both the elementary and secondary school levels as a clinician who serves children individually or in small groups (five to ten children). The clinician holding only the Provisional Special Certificate in Speech and Hearing Therapy shall not function as a regular classroom teacher. The following duties are construed

[6]See Carrell, *op. cit.*

[7]See Carrell, *op. cit.*

[8]See Carrell, *op. cit.*

as functions of the Speech and Hearing clinician:

A. Make school survey of speech and hearing defects.
B. Prepare individual diagnosis and case histories of children with speech and hearing defects.
C. Give individual and group therapy to children with speech and hearing deficiencies.
D. Conduct individual and group conferences with pupils, parents, teachers, social workers, principals, and specialists.
E. Maintain adequate records on individual pupils.

II. Provisional Certificate:

A four-year provisional special certificate in speech correction and hearing therapy valid for performing the duties defined above will be issued upon evidence of the following:

A. Personal and physical qualifications necessary for successful work with handicapped children.
B. A B.A. degree from an institution approved in the field of speech and hearing therapy. Included within, or in excess of the requirements for the degree, evidence of the following:

Professional Preparation:

1. Educational Psychology
2. Principles of Teaching (or Education)
3. School Organization or Management
4. Methods of Teaching Speech Correction and Lip Reading
5. Clinical Practice, 200 clock hours including:
   a. Administering diagnostic and achievement tests to children with speech and hearing handicaps.
   b. Writing case histories.
   c. Giving speech correction and lip reading instruction.
6. Electives from the following to provide a total of 17 semester hours of professional preparation:
   a. Intelligence Testing — Binet and Performance.
   b. Psychology of Remedial Instruction (Remedial Reading).
   c. Social Case Work.
   d. Counseling and Guidance.
7. General preparation in the following fields (40 semester hours well distributed over the following):
   a. Biological Sciences.
   b. Social Sciences.
   c. Languages.
   d. English and Speech.
8. Special Preparation (36 semester hours well distributed over the following):
   a. Psychology of Personal Adjustment.
   b. Child Psychology.
   c. Adolescent Psychology.
   d. Psychology of Remedial Instruction.
   e. Psychology of Exceptional Child.
   f. Voice and Articulation.
   g. English Phonetics (practical and applied).
   h. Introduction to Speech Pathology (Functional disorders).
   i. Advanced Speech Pathology (Organic and rhythmical disorders).
   j. Psychology of Speech and Hearing.
   k. Introduction to Statistics.
   l. Courses under item 6 not elected.

III. Professional Certificates:

The eight-year professional special certificate in speech correction and hearing therapy will be issued upon evidence of 24 months of successful clinical experience in the field and the satisfactory completion of 18 semester hours of additional training credit taken in an institution approved for graduate work in speech and hearing therapy. Only credit earned since granting of the Baccalaureate Degree may be counted. Such credit shall represent a purposeful pattern pertinent to the needs of a speech and hearing therapist. The following courses are recommended:

A. Physics of Sound and Speech.
B. Audiometric Testing and Use of Hearing Aids.
C. Anatomy and Physiology of Ear and Vocal Mechanism.
D. Pathology of Ear and Vocal Mechanism.
E. Clinical Psychology (Child Behavior Problems).
F. Stuttering—Methods and Practice.
G. Advanced Clinical Practice.
H. Experimental Phonetics.
I. Genetic Psychology.
J. Embryology.
K. Experimental Psychology.
L. Research and Seminars in Speech Pathology.

IV. Permanent Certificate:

The eight-year professional special certificate in speech and hearing therapy will be made permanent upon evidence of:

A. Forty months of successful experience under the eight-year professional certificate.

B. Evidence of a M.A. or Ph. D. degree in the field of speech correction and hearing therapy.

V. Addition of Speech Correction and and Hearing Therapy to other Certificates:

Any provisional, professional or permanent elementary or secondary certificate will be validated for Speech Correction and Hearing Therapy upon evidence of completion of the specialized preparation outlined in II-B above.

VI. Temporary Certificate:

Until such time as an adequate supply of clinicians with the above qualifications is available temporary certificates in Speech Correction and Hearing Therapy will, upon request of the employing superintendent, and the recommendation of the Supervisor of Special Education, be issued to individuals whose qualifications are satisfactory to the Supervisor of Teacher Education and Certification.

3. State Remuneration. One more point on state certification should be noted. Several institutions offer majors in speech correction without any state certification: Utah, Colorado and Maryland are such states with their training institutions—Brigham Young, Denver, and Maryland—offering programs for speech correctionists. Iowa and Ohio have just released their state requirements. New York will release in the near future. If one can judge from the financial situation in Illinois, this state support is important. Until there is certification, which usually calls for remuneration from the state —or perhaps the remuneration comes first and is followed by certification— one will not find too many students aspiring to be speech correctionists. Most students wish for financial security as well as prestige after their training. Of course, if the institution is interested mainly in training its students for graduate research, state certificaton is not necessary. But meanwhile, who is taking care of the child with defective speech?

Observations

THE FOLLOWING remarks are not conclusions but observations on the requirements for specialization offered by various institutions in comparison with state certification. These comments might be raised to point-value by vigorous discussion and study of the complete training program offered:

1. Although there is variance in the type of 'curriculum-making,' the emphasis on specialized courses is similar. Some obvious omissions in courses on hearing and acoustical training should be corrected. The number of hours in specialization should be increased in some instances. There is agreement among directors that psychology courses, including child, adolescent, clinical, and also tests and measurements, are necessary to the training program. Physiology and anatomy run a close second in importance.

2. Whether the training program should include four years of general cultural courses and a fifth year of specialization before certification, or whether the program of training can be incorporated successfully in a period of four years with the student's choice of a fifth year of graduate study is a question of standards which ASCA must evaluate through discussion and examination of complete curricula.

3. The professional standard involved is a matter for discussion. State certifications must undergo revision for the prestige of the profession. Certainly state requirements should be brought up to institutional standards, which in turn should provide minimum requirements comparable to those offered in ASCA. The profession, the prospective speech correctionist, and state support are all involved.

4. The courses in specialization should be studied against the background of the general course of study for the proper perspective.

5. Too few speech correctionists are being trained and certified for the urgent need in school systems, probably due to lack of state support and understanding of the problems of training. Comments on questionnaries revealed the need and desire for change, improvement and growth within institutions and within the state.

6. Lastly, somehow, support and help should be given to those who are struggling without university support and understanding and without state aid. This struggle, sometimes lasting for years, should not rest on the shoulders of one

person. There should be a positive, progressive program to help those who need it. The department that was born with a silver spoon in its mouth—with money, personnel, and understanding—has built easily. There should be no struggle as difficult as the following notation indicates:

'1. Difficult to educate faculty with regard to program.

'2. Difficult to arrange satisfactory program because of college 4-hour, 4-course plan and college objectives.

'3. Up to last year, it was difficult to to place our 4-year pupils; hence it was difficult to arouse interest in more than a few students in the undergraduate program.

'4. Lack of development of speech correction work in the state makes many unfamiliar with the possibilities early in their college career.'

A. S. C. A. Convention

HOTEL SHERMAN, CHICAGO, ILLINOIS

DECEMBER 30, 31, 1946, JANUARY 1, 1947

The Formal Call for Papers to be presented at the forthcoming annual convention of the American Speech Correction Association was published on page 96 of the June issue of the *Journal*. The Program Committee set August 1 as the deadline for submission of abstracts of papers. Anyone who was unable to meet that deadline, but who would still at this time like to submit an abstract for consideration by the Program Committee, should write immediately to the Chairman, Dr. Mary Wehe Huber, 2 Grace Court, Brooklyn, New York. This implies no commitment by or for the Committee, but every possible consideration will be given to legitimate proposals regarding contributions to the convention program.

All members of the Association are urged to attend the convention which will be of unusual significance because of the rapid expansion now going on in the speech correction and hearing conservation fields. This expansion, greatly stimulated by the military programs during the recent war, is going forward on the broad and substantial base provided by state-wide special education programs which are being undertaken increasingly throughout the country. It is generally characteristic of these state programs that they provide for financial aid from state funds to local school districts for part or even substantially all of the cost of special instruction for handicapped children, including those with speech defects and hearing deficiencies. This principle of state aid to local districts has the practical effect of removing one of the most important obstacles to the development of speech correction and hearing conservation and of augmenting the popular demand for these services on the part of school patrons.

Development in these fields is being further stimulated by the activities of several national and state organizations. Prominent among these are the National Society for Crippled Children and Adults, Inc., the Committee on Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology, and the Veterans' Administration. The problems of integrating the programs of the many groups concerned with speech correction and hearing conservation is extremely fundamental during this period of rapid expansion. Policies and points of view now emerging will be influential for years to come. Every member of the A.S.C.A. who is concerned with a teacher-training, research, or clinical service program in a college or university, a public school, a hospital, or a private clinic has a most important stake in the discussions that will be carried on at the next convention. The profession as a whole will benefit from the maximum participation of those concerned in the deliberations of the convention.

The convention program and relevant information about the meetings will be printed in the December issue of the *Journal*.

News and Announcements

(Continued from Page 204)

ing and testing of lipreading ability through the use of motion pictures. Dr. Marie K. Mason, Ohio State University, Dr. Gladys Reid, New York City, and Lt. (jg) Miriam D. Pauls, participated in the discussion.

Dr. and Mrs. A. W. G. Ewing gave a series of lectures that were well attended each afternoon.

One of the most interesting events was the Visible Speech demonstration arranged by Bell Telephone Laboratory. Miss Harriet Green showed the remarkable skill in reading visible speech that a couple of six-year-old deaf children gained after a few weeks of instruction. It clearly indicated its possibilities as a teaching medium.

The Minnesota Speech Clinicians Association held a two-day institute in Speech Correction, May 24 and 25, at the University of Minnesota Center for Continuation Study. Lectures, discussions, and demonstrations of various aspects of defective speech and hearing were given. Participating in the program were: Dr. Harold Westlake, Speech and Hearing Clinic, Northwestern University; Mrs. Berneice Rutherford, Speech Clinician, Michael Dowling School for Crippled Children, Minneapolis; Mildred Templin, University of Minnesota Institute of Child Welfare. Also, participating were Dr. Bryng Bryngelson, Katherine Thorn, Alice Mendenhall, and Leroy Hedgecock, University of Minnesota Speech Clinic.

The fall meeting of the Minnesota Speech Clinicians Association will be held October 24 and 25, during the Minnesota Education Association Convention at Minneapolis.

On October 24, Dr. Charles Van Riper, Director of the Speech Clinic, Western Michigan College of Education, will speak on 'Articulatory Problems in the Classroom.' Following this talk will be a discussion of the subject by four persons from other areas of education. At the October 25 meeting, Dr. Van Riper will speak on stuttering.

The Army is constructing a permanent Aural Rehabilitation Unit at Walter Reed Hospital, Washington, D. C. It will be staffed by civil service personnel who have had experience in one of the three wartime army units. In addition to serving army personnel, it will service deafened veterans from that region.

According to present plans, the Hearing and Speech Clinic at the U. S. Naval Hospital, Philadelphia, is the permanent Naval center for rehabilitation and for research in speech and audiology. Since April first, the Clinic has occupied its permanent quarters, specially designed and equipped for retraining and for audio-acoustic testing and research. In completing this unit, the Navy has made every attempt to achieve the best in architecture and equipment for work at the clinical level. Rehabilitative services for speech and hearing are available for both Naval and Veteran personnel.

The Veterans' Administration is setting up excellent rehabilitation services in the New York Regional Offices at 252 Seventh Avenue, Manhattan. A service that is being developed as rapidly as possible is the Aural Rehabilitation Unit under the medical supervision of Dr. Edmond P. Fowler, Jr. The director of the unit is Mr. Moe Bergman. The service offered

(Continued on Page 224)

Differential Diagnosis of Aphasia In Children

Lorna S. Nance*

APHASIA in children has been recognized for approximately a hundred years as a problem of speech retardation separate from ordinary disorders of voice and articulation. Within this period the literature has contained numerous articles describing cases of children with a type of speech retardation similar to aphasia as we understand it.

The inability to develop adequate speech behavior originally was considered as evidence of mental retardation. In contradiction of this belief, however, Wilbur (5) found, in 1867, that in a school for idiots there was a group of children who did not use speech, but whose general behavior indicated they were of normal intelligence. Later, these same types of children were placed in schools for the deaf, although they did not belong there because they obviously had a considerable, or even a normal, amount of hearing. Ewing (2), in 1940, made an intensive study of hard of hearing children and speech retardation cases. He found that of the 10 children who were tentatively diagnosed as aphasics, 6 did have high frequency losses which might have accounted for their retarded speech development. The other 4 had normal hearing, and he could find no basis for their failure to develop normal speech.

Worster-Drought and Allen (5) have reviewed the literature with respect to aphasia of the receptive-expressive type in children. They have pointed out that many modern investigators seek an analogy between the condition in children and that of acquired aphasia in adults. They contend that this analogy is not tenable, however, because the child has no background of language behavior against which his condition may be measured, whereas the traumatic aphasic does have this background.

Aphasia, as defined, refers to specific sorts of language disorders. The argument over aphasia in children arises over a confusion in terms. The word has been used to refer to certain types of language disorders due to cortical pathologies in acquired aphasia. An observation of the similarity between these disorders and the lack of language development in children has resulted in an application of the term to describe this latter type of case. Against this use of the term is the fact that we cannot find *identical* language disorders in children and adults because they would be symptomatically different. The adults have lost an ability to use meaningful speech, whereas the children have failed to develop this ability.

A second hypothesis has arisen that while the children's cases are not *identical* with those of adults, they are similar and are presumably due to some cortical patholgy, such as faulty development. However, there is no conclusive way of examining the child by which evidence of such pathology can be obtained. The literature contains no information that any child with suspected aphasia has ever been brought to autopsy.

The first hypothesis as to the etiology of aphasia in children is not acceptable because of differences be-

*This paper represents in substantial part an M.A. thesis done by the author at the State University of Iowa, 1944, under the direction of Dr. Charles R. Strother. The paper was read before the American Speech Correction Association, Columbus, Ohio, December 29, 1945.

tween child and adult cases in symptomatology. The second hypothesis has not been conclusively proved. It appears, then, that aphasia in children is a disorder in language development, but the etiology has not been conclusively established.

The most frequent reasons for failure to develop language are mental retardation, hearing disability, lack of stimulation, lack of motivation, and emotional traumata. The first two, mental retardation and hearing disability, can be measured objectively. The last three may be ascertained on the basis of historical evidence, and also by noting response to therapy.

If all of these factors were ruled out in a given case, we would say that there was a disorder in language which cannot be accounted for on the basis of any of the factors known to produce language retardation. Such a disorder we would call aphasia in children. This appears to be the best definition that can be given at present for congenital aphasia.

On the basis of this definition, then, we would specify two types of aphasia in children: expressive aphasia—that type in which the child understands but is unable to use language meaningfully; and receptive-expressive aphasia—that type in which the child neither comprehends language nor uses it meaningfully.

WHILE the various investigators have been able to eliminate the usual causes for language retardation as factors in their cases, there is no evidence that a systematic examination procedure has been followed. It appears, then that if an adequate differential diagnosis is to be obtained, a more standard and thorough method of examination is needed. We have attempted, accordingly, to produce measures which can be standardized and used objectively to secure a differential diagnosis of aphasia in children.

A very complete case history questionnaire was written which covered not only birth and development history, but also illnesses and accidents, family relations, emotional problems of the child, stimulation and motivation to speech, and attitudes of others toward the child. A fairly extensive use of this history in the Psychology and Speech Clinic at the University of Iowa indicates that it is quite adequate.

At the time the history is obtained, a measure of social functioning is secured by means of the Vineland Social Maturity Scale (**1**). Recent texts on speech pathology indicate that numerous cases of speech retardation can be traced to over-protection, and also to traumatic experiences at the time the child is learning speech. In other instances, the child has not been stimulated to speak, but has been allowed to use gestures. The combination of the Vineland Scale and the case history seems to cover quite adequately the progress the child has made in his relationships with others, and in areas of self-help, emotional adjustment, and social competence. They differentiate the child who is generally immature from the child who is immature in specific areas.

The testing of hearing in small children has always presented a problem. The subjective method of watching for reflex responses to sound, the watch-tick test, and the whisper test are not adequate for the intensive study which should be made of a possible aphasic. Administrative problems arise when a small child is confronted with an audiometer test. Ewing's (**2**) tunnel technique is fairly objective, but elaborate, and requires two attendants. Since none of the previously employed measures seemed entirely satisfactory, apparatus for measuring hearing acuity was constructed.

This apparatus makes use of a discriminative technique based upon ability to learn to respond to sound. The

child is trained to discriminate between two sounds, first using a separate light simultaneously with each sound to produce a cue. The light cue is then eliminated and the child is expected to respond to the sound alone. For each correct response he receives a small reward. The purpose of this apparatus is to determine whether the child hears sound, and whether he can discriminate between sounds. The apparatus has recently been improved in such a way that an audiometer is used as the source of sound. A full description of the improved technique will be published soon.

In order to secure an adequate measure of mental ability in a case of speech retardation, it is necessary not only to determine the level of the child's functioning on performance, or non-verbal, items, but also to compare his performance in verbal tasks with the performance of the normal child. This would mean that a measure of mental ability for use in differential diagnosis would need to produce a score for non-verbal tasks, a score for tasks which require verbal comprehension, and a score for tasks which require both verbal comprehension and usage.

A review of the literature failed to produce information about a standard test which would meet these requirements. It was therefore necessary to build one. All items used were drawn from well known and widely used intelligence tests. Non-verbal items were those for which both instructions and responses were required in pantomime. Where there was no direct evidence that the item had been previously presented in this manner, the practicability of giving instructions by pantomime was determined by presenting it to five- and six-year-old children in the Iowa City Public Schools. Their scores were then compared with those of an equated group to whom the item was presented according to the instructions given by the author of the test from which that item was drawn.

The test was constructed in terms of age levels similar to the Stanford-Binet (**3**, **4**). The criteria upon which the choice of items was made were:

1. Each item was assigned to the age level at which it was passed by 45 per cent to 55 per cent of the standardization population.

2. The steepness of the curve of percentage passing for each age level must show sizeable increases with increasing age.

3. The item must be easy to administer, interesting to the child, and the time for administration must not be excessive.

The levels of the test were placed at six-months intervals from two years through seven years. A median mental age is secured for each of the three sections of the test; that is, for pantomime items, language comprehension items, and language comprehension and usage items. It was felt that these scores should differentiate the mental defective, who would be consistently low; the expressive aphasic, who would be low in language usage items; the receptive-expressive aphasic, who would be low in items requiring both language comprehension and usage; and the child of normal capabilities, who would perform adequately on all three portions of the test.

In an attempt to measure the amount and kind of language retardation present, a scale of language development was constructed. The items were drawn primarily from developmental scales and verbal portions of intelligence scales. They were divided into two types: those requiring comprehension of language, and those requiring both comprehension and use of language. This test was also constructed in terms of age levels similar to the Stanford-Binet, and the levels were placed at six-months intervals from two years through six years.

The language comprehension items were such that the child could perform without verbal response, but he received his instructions verbally. The comprehension and usage items required verbal instructions and responses. Placement of each item was made at the age level at which approximately 50 per cent of the standardization population passed that item, and it was required that the item show a definite increase in the percentage passing at successive age levels.

A median language age was secured both for language comprehension and for language comprehension and usage.

On the basis of this test, children may be divided into three groups:

1. Those in whom there is no comprehension and no use of language. Here the differential diagnosis will lie among speech retardation due to mental retardation, or severe hearing disability, or lack of exposure to speech, or receptive-expressive aphasia. The mentally defective child will be revealed by his consistently low score on the performance items of mental ability. The child with a severe hearing loss will be revealed by his failure to respond to sounds and the inability to train him to respond to sound. The child who has lacked opportunity to learn speech will be differentiated on the basis of the case history.

2. Those who show substantially normal comprehension but no use of language. Here the differential diagnosis lies among speech retardations due to lack of stimulation, emotional mutism, and expressive aphasia. This differentiation is accomplished for the first two by an analysis of the case history.

3. Those who show both language comprehension and usage, but whose speech is not intelligible. This group includes the severe articulation cases. The basis for differential diagnosis lies in a close analysis of the phonetic aspects of speech. The exact form such an analysis will take is still to be worked out. It can be stated, however, that normal comprehension and consistent usage probably would exclude the possibility of aphasia and would classify the case as one of articulation.

IN ORDER to render a diagnosis of aphasia in a given case, the findings of the tests listed here must be negative. That is, the factors of mental retardation, hearing disability, emotional problems, lack of stimulation, lack of motivation, social immaturity, birth injury, and severe articulation defect must be ruled out as causes for retarded speech.

If none of these factors is found to be basic to the problem presented by the case, then a diagnosis of 'idiopathic expressive aphasia' may be returned for the child who comprehends but does not use speech meaningfully. A diagnosis of 'idiopathic receptive-expressive aphasia' may be returned for the child who neither comprehends nor uses speech meaningfully.

If there is an objection, as some investigators have indicated, to the use of the term 'aphasia' in this sense, then there is no reason why a more inclusive term, 'idiopathic language retardation', should not be used. This term would define the problem presented. It is a language retardation, and since there is no known cause for its existence it should be termed 'idiopathic.'

The examination procedure proposed here lays the foundation for further studies. The language development test needs many changes, both of items and of age range, and the articulation portion of this test still needs to be developed. The mental ability test, as we have already discovered, needs expansion in both directions as to age levels. Also, several of the items are not adequate for the particular type of child presented because they presuppose some education of an

academic nature. The hearing acuity test, as we have already stated, has been reconstructed and is receiving further investigation.

All these tests need to be standardized and validated by large scale use before they can be finally accepted as an adequate means for securing a differential diagnosis of aphasia in children.

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THE CHANGES CHANGE DEMANDS

In a way, it is a pity that there is so much sermon-making these days on the theme that 'we live in a changing world'—a pity, because after a while one hears the word and automatically assents and glosses over the immensities referred to. So fast are things moving, so accelerated is the pace of discovery and construction that an AAF engineer told me recently that it is now possible only for teams of men to keep up with developments in specific technological areas. And so much is being worked on that in medicine, engineering, and physics, a man's area of specialization grows ever smaller and smaller, as the frontiers expand wider and wider. This world is no place for nervous systems which have been trained to enjoy things as they are and which expect them to remain so. Yearly, the beds in our hospitals become filled with those whose premises and outlook, solidly moored to fixities, give way to the flux. If men are to get along in a swirling flow of events, they must be so oriented. In the words of Lincoln, 'The dogmas of the quiet past are inadequate to the stormy present.' Our students must learn the means of evaluation which can find adjustment in and to the change. It is not easy to learn that. The linguistic patterns and structures which we have inherited stress the static and the simple so pervasively that often our very training incapacitates us for easy adjustment.

From 'Evaluation: With and Without Words' by Irving J. Lee. (*Etc.: A Review of General Semantics*, Spring, 1946, Pp. 193-203.)

News and Announcements

(Continued from Page 218)

deafened veterans is similar to that which was found essential in the military programs.

A conservation of hearing class is being established in Montgomery, Alabama, under the sponsorship of the Chamber of Commerce. An experienced teacher of the deaf, Mrs. Isabelle Demarest, has been employed to conduct the class. Mrs. Demarest will also be able to bring to bear the knowledge gained by one who has worked in a military aural rehabilitation program, for she was connected with Borden General Hospital for two years.

The 'visible speech' apparatus, developed and demonstrated by the Bell Telephone Laboratories, has been turned over to the University of Michigan for research in regard to educational application. This research will be carried on in the Speech Clinic of the University's Institute for Human Adjustment under the directorship of Professor H. Harlan Bloomer. Two members of the research staff of Bell Laboratories, Dr. George Kopp and Miss Harriett Green, will join the faculty of the University and Michigan State Normal College, respectively, to assist in the project. Dr. Kopp has been a member of the Bell Telephone Laboratories during the war years. Assisted by Miss Greene, he did much of the phonetic analysis and exploration of the educational possibilities of the 'visible speech' apparatus.

On June 16, 1946, the members of the American Society for the Hard of Hearing voted to change the name of their organization to: American Hearing Society. The new name was acquired for the purpose of emphasizing *hearing* rather than *hard of hearing*, and to make clear the fact that the Society membership is open to all who are interested in existent or potential losses of hearing.

The 1946 Summer Speech Clinic program at the University of Iowa was augmented by funds provided by the Iowa Society for Crippled Children and the Disabled. These funds were allocated to the upkeep of two dormitories for children, thus almost doubling the number of children who could attend the Clinic. The funds were also used to provide for each dormitory a house mother, a recreation director, and a liaison officer who was responsible for assisting with the home work assigned to the children.

Miss Jayne Shover has been named to head a national voluntary drive bringing help to the country's 300,000 or more cerebral palsied.

Miss Shover's appointment as director of the National Society for Crippled Children and Adults' new cerebral palsy division has been announced by Lawrence J. Linck, executive director of the Society since last October.

Miss Shover has been acting director of the National Society's field services since 1945. Before then, she was supervising psychologist and special education director of the Illinois Division of Service for Crippled Children and consultant to the Illinois Commission for Handicapped Children. In this capacity, she assisted in establishing treatment for more than 500 cerebral palsied children at university centers in Illinois.

She previously served as director of speech and hearing, and child guidance services, for the East Chi-

(Continued on Page 232)

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A Speech Pathologist's Professional Code

W. Arthur Cable*

THE AUTHOR of this analysis recognizes that not all of the following principles and policies will be accepted today by all speech pathologists, since each one is a product of his total experiences to date and no two have had the same experiences. Nevertheless he believes that these over-all guiding points of views, attitudes, principles, and policies offer formulations acceptable to many practitioners in the profession, that they offer worthy points for deliberation by other practitioners, and that they may serve as a contribution to the training of present and future recruits in the field.

Although the principles are classified, for convenience, under one or another of five headings, they are to be regarded as generally inter-related. The headings are meant to indicate areas of emphasis rather than independent categories. The principles are presented without explanation or elaboration whenever it appears permissible. They are offered for open-minded consideration by the reader, and eventual application in practice.

Orientation and Underlying Philosophy

1. *Interest in people.* We must care more for *people* than we do for *things.* We must like people. Although in professional circles we have the habit of speaking of the persons with whom we work as 'cases,' we must never think of them nor treat them only as 'cases,' but as fellow human beings with problems which we must help to solve.

2. *Confidence.* We must have faith in ourselves and in each 'case.'

3. *Unselfishness.* Our time must belong to our cases, within reasonable limits.

4. *Service the dominant ideal.* In terms of personal satisfactions, the service we render should mean more to us than the money we receive for our professional services.

5. *See the relationships and connections among all things (non-elementalism).* The world of nature, the fact-process territory of this world, is not neatly departmentalized and mutually segregated. Each item or unit is related in space-time, and otherwise, to everything else in the universe. For example, if we keep our thinking, speaking, and other conduct in harmony with life facts, we shall never think of, nor speak of, nor treat the 'body' and 'mind' as two separate entities nor as aspects that can ever actually be separated. We shall recognize that they can be separated only verbally; and we shall keep our language in harmony with the facts. If we keep the related facts in view, we shall also see the organic relationships between all other aspects of our world, and shall act accordingly.

Recognizing that everything in the universe has definite relationships to every other thing, we will give due consideration, in our speech correction practice, to each case in terms of his present condition physically, mentally, socially, educationally, vocationally, morally, spiritually, avocationally, and in other respects. His speech and other personality problems are bound up, actively, potentially, or historically, with all of these aspects.

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6. *A dynamic world.* We recognize that a case is not just a person, but an entire *person-in-his-environment.* On investigation, we find that everything in the universe is in a continuous state of flux, of change. This applies to each *case-in-his-environment:* not necessarily always in deterioration or in improvement, but in constant modification—even day to day and hour to hour and minute to minute.

7. *An inclusive case history.* Recognizing that, at any given moment, one is a product of his inheritance and of all of his past experiences, we are perforce interested not only in the various aspects of each 'case's' present condition, but also in his various records, including his medical and surgical, dental, nutritional and metabolic, hygienic, otological, optical, endocrinological, respiratory, circulatory, biochemical, electrochemical, neurological, psychological, educational, pathological, developmental, embryological, and genetic case history.

8. *Cooperative and referral practice.* We must work in harmony and cooperation with the doctor, surgeon, dentist, physiotherapist, masseur and masseuse, psychiatrist, consulting psychologist, and allied practitioners, referring any speech case to the proper specialist at the proper time. In order to do this intelligently and effectively, we should know the fundamentals in each of these fields and follow the main developments in them; but we need not and usually will not be specialists in any of these areas.

A Point of View on Normal and Abnormal Speech

9. *Speech a reciprocal process.* We recognize a speech situation, in its simplest terms, as a mutual 'two-ended' process between two persons who employ the speech code for the purpose of exchanging meanings.

10. *Speech essentially a social agency.* We should recognize the basic social nature of speech: that speech is primarily an agency by which contact with others is achieved and maintained; that, basically, speech is the principal medium of adjustment to one's fellows and of their adjustment to one's self.[1]

11. *Acceptable and unacceptable speech.* We regard acceptable speech as that which performs the social functions which the speaker[2] wishes to carry out, in a manner pleasing or satisfying to the others involved in the speech situation. In other words, the speaker, by acceptable speech, stirs up in others the specific meanings which he wishes to stir up, and avoids stirring up meanings that he does not wish to stir up.

On the other hand, we regard socially unacceptable speech (i.e., defective or disordered speech) as that which fails or falls noticeably short of achieving the speaker's purpose by virtue of:

a. calling unfavorable attention to itself

b. failing to stir up definite meanings

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[1] I do not call speech a means of communication, because that term is to me a misnomer. Ideas and feelings are not communicated in the sense of being delivered *from* one person *to* another. They are only stirred up in others—for example, by means of speech. And the speaker never can hope to stir up in others ideas identical with his own, because the experiences of no one else have ever duplicated his. If the speaking is effective, he can hope only to stir up in others ideas that are more or less similar to his own. The point to remember is that ideas are always 'home-grown.'

[2] When I use the term *speaker* I am not referring primarily to a public-speaking, interpretative reading, acting, or radio situation. Those are specialized speech situations, and are included in my meaning. But in using the term *speaker* in this paper, I am referring inclusively and primarily to *any* situation in which one person stirs up meanings in others by the joint agency of a meaningful audible code of conventionalized vocal sound symbols and conventionalized meaningful bodily postures, movements, and gestures (including eye and facial symbols).

c. stirring up ambiguous or irrelevant meanings
d. distracting the listener or listeners
e. being inappropriate to the speaker, reactors, or occasion; or
f. any combination of the foregoing.

12. *The speech instrument the entire organism.* Some of us regard the *entire* human organism as the speech instrument. We cannot consider as the speech instrument only the respiratory, phonatory, resonance, and articulatory apparatus; for we have seen that, in effective speech, the *entire* organism participates. That is to say, in effective speaking each system or set of tissues—such as the circulatory, skeletal, muscular, nervous endocrine, etc. —plays its part. In addition it is observable that each system does not function independently, but as a complex of inter-related and inter-acting systems.

13. *Organism-as-a-whole functioning.* We should recognize that effective speaking or normal speaking is that in which the entire human organism functions *as one harmonious unit*—functions as a totality, smoothly and efficiently. This is sometimes referred to as organism-as-a-whole functioning, and again as integrated functioning. We recognize that in defective or disordered speech there is not smooth coordinated functioning of all parts of the organism. In clinical cases, the development of integrated speaking therefore becomes a major objective.

14. *Speech a set of relative, not absolute, values.* It is observed that normal speech is not represented by an isolated and fixed point on a scale, but may fall at any point within certain limits on the scale. In other words, speech is regarded as normal if its measurement falls on a scale at any point within linear limits of varying degrees of effectiveness. Thus the normal speech of various persons differs in degree of desirability or excellence.

Likewise abnormal speech is represented not as at one fixed and isolated point, but is measured by falling within certain limits on a *success-failure* or an *excellent-satisfactory-inadequate-futile* scale, or any other valid measuring scale. And in reality, an adequate scale is not one consisting of a succession of several ranges, but is a graduated and extensive scale consisting of myriad intermediate points between the opposing extremes: *plus* to *minus, successful* to *futile, effective* to *ineffectual, 100 per cent* to *0 per cent,* etc.

In addition, all measuring must take into account the nature of the speaker and his environment.

15. *We and our cases have many points in common.* We must not forget that usually our cases are normal in many ways with just a few abnormalities, much as we ourselves are normal in most ways with a few abnormalities. And we should treat our cases as basically normal.

16. *Speech is a symbolism.* We should understand the basic symbolic nature of speech. We should grasp the implications of the fact that speech activity is not a substance of, by, and for itself, but that in its entirety and in detail, speech always stands for, represents, or symbolizes things, persons, relationships, characteristics, processes, concepts, experiences, observations, etc. This is another way of saying that words, phrases, and connected speech are only 'maps' of territory, not the facts, events, processes, and other forms of reality.

We should likewise recognize that all other linguistic forms, such as writing and reading, also function entirely as symbols, and that when they are used adequately, they are more or less successful in mirroring reality.

17. *Facts before related language.* We must therefore recognize that the facts, events, processes, and relation-

ships of reality must come first—must come *before* the language relating to them, whether in our speaking or writing. This has long been an established practice in the laboratory sciences, but seems to have been and to be at present largely ignored in the social sciences, the humanities, and the arts. As a result, we have a higher rate of divorce, organizational cleavage, social problems, civil strife, and international war than would evidently be the case if people gave more attention to *facts* than they give to words.

18. *Our language should accurately portray the related facts and processes.* In dealing with our cases, facts and their significance must not only precede our linguistic thinking and overt behavior concerning the case, but if we maintain sufficient veracity we shall always strive to keep our language in harmony with those facts. Because of the present structure of our language and our intensional linguistic habits, this will often be difficult; but we shall not relax in our efforts, and shall improve with experience.

19. *Speech the initial racial linguistic medium.* Present evidence leads to the conclusion that, of the so-called communication skills in the history of the race (speaking, writing, reading, listening, manual and sign language of the deaf, braille for the blind, semaphoring, telegraphing, and cryptography), the activity of speaking apparently developed first—although originally and for ages, it was of an exceedingly crude type. It should be clear to us that writing[3] is basically a crude method of recording the speech used on a given occasion; that the writing *abstracts* only a portion of the audible part of the speech code, entirely ignoring the meanings initially conveyed by vocal qualities, inflections, etc., as well as the entire visible aspect of the speech code; and that manual and sign language of the deaf, semaphoring, telegraphing, and cryptography are specialized adaptations of an attempt to record speech for future use or later reference.

20. *Meanings not inherent nor absolute in words.* It should be clear to us that meanings are not inherent in words; that words are devoid of meaning except as people assign meanings to them; that therefore there is no such thing as the *true* meaning of a word, except in terms of its customary or common use in any particular society during a very restricted period of time. Thus meanings of words are relative, not absolute. Therefore we come to appreciate that dictionaries are simply histories of the most common uses of words, and that their only claim to authority is their accuracy in reporting and interpreting the past uses of words.

21. *Assigned meanings of words always in flux.* It should be evident to us that no one word ever means exactly the same thing to any two persons (because the experiences and learning of no two have ever been the same) and also that a person seldom if ever uses the same word twice with exactly the same meaning. We must recognize that, in fact, the same word is used to mean many, many things.

Not only should we see that words are seldom if ever used twice in the same way, but that this fluid use of words caused their accepted meanings and pronuncations to be constantly in flux; that words exhibit not a static character but a very dynamic, constantly changing one.

[3]Whenever, in educational systems, more attention is devoted to training in writing than to training in speech, 'the tail is wagging the dog.' Training in writing does not improve speech, nor does training in speech improve writing. Most people daily speak hundreds of words to every one they write. If there is any emphasis, where should it lie?

Training Needed by Speech Pathologists, Correctionists, and Clinicians

22. *Speech a learned activity.* There is abundant evidence that speech is a learned activity. This being true, speech can be unlearned, relearned, and modified in various directions. This fact provides the neurological basis for the correction of defective and disordered speech. In other words, the speech skills are a set of habits. They are therefore not only subject to modification by the learning process, but are unavoidably modified (to different degrees in different persons, because of neural differences) by one's environment.

23. *A broad speech training.* We must have had a firm, sound, and extensive training in non-pathological aspects of the entire field of speech, including the fundamentals, social speech, interviewing, group discussion, panel discussion, public address, story telling, interpretative speech, acting, phonetics, the psychology of speech, vocal anatomy and physiology, and paravocal anatomy and physiology.

24. *Speech correction is partly applied psychology.* It should be agreed that a person is not a good speech pathologist, correctionist, or clinician until he is a good psychologist and a good applied psychologist. His training in psychlogy should include individual, physiological, educational, child, adolescent, adult, social, behavioristic, Gestalt, dynamic, genetic, and experimental psychology, and 'mental' tests and measurements.

25. *Speech correction is applied zoology.* Speech pathologists should have had at least basic training in the zoology sciences, because whenever one diagnoses or treats a case of defective or disordered speech he deals with tissues, and must know the essentials of tissue formation, development, structure, and functioning. Four fields of zoology stand out as contributing most to speech pathology. They are human physiology, anatomy, embryology, and pathology. A premedical course is a distinct and powerful asset to a speech pathologist.

26. *Contributions from the physical sciences.* Some training in physics, chemistry, physical chemistry, biochemistry, and electrobiology is profitable to a speech pathologist. This is especially true for one who wishes to conduct research on various problems in the field of speech pathology and correction.

27. *Contributions from mathematics.* An important phase of speech correction consists of the administration of speech correction tests, measurements, and surveys and the statistical computation of the results. In this field, mathematics and one of its corollaries, statistics, are essential tools. Speech correctionists who have training in mathematics and statistical method thereby possess valuable assets for various types of positions in speech correction.

28. *Keeping up to date in fields of allied research and application.* We must keep up to date constantly in application to speech pathology and correction, from researches in the zoological sciences, nutrition, biochemstry, electrobiology, biophysics, medicine, surgery, oral surgery, psychology, and psychopathology or psychiatry.

Principles of Examination and Diagnosis

29. *No two cases ever identical.* We know from observation and experience that no two cases, even of the same type of speech defect or disorder, are ever identical; that, in fact, any two cases of the same type or types of deviations, will differ more or less widely, due to many causes—psychological, environmental, hereditary, etc. In examinations, we look for similarities in the differences, and for differences in the similarities.

30. *A thorough examination imperative.* Knowing the interrelations between 'mind' and 'body' to be extremely complicated, in examinations we canvass the speech personality thoroughly to find as many as possible of the defects and disorders in any given case.

31. *Diagnosis must precede therapy.* Before starting treatment on any case, we not only make a thorough examination of tissues and speech characteristics, but also careful diagnosis (i.e., a determination of the causes of the speech abnormality or abnormalities). This is necessary in order to prescribe the most applicable treatment for the individual case.

32. *Multiple contributing causes.* In diagnosing a case, we look for all the causes that we can find. Seldom if ever has a given defect one cause only. Ordinarily, at least, the causation is multiple.

33. *Comparative ratios among causes.* The next stop is to determine *how much* influence each cause has exerted on the case. We should survey the causes with this question in mind: How much did this cause contribute? What percentage should be assigned to that cause? How much to this third cause? Etc.

PRINCIPLES OF THERAPY

34. *A professional attitude.* All aspects of our conduct in examination, diagnosis, and therapy must be on a professional plane.

35. *Sincerity.* Sincerity must characteristize everything we do in therapeutic procedure. Genuineness is essential.

36. *Purposweness.* All of our therapeutic practice in any given case must be purposive--must support the major therapeutic goal.

37. *Motivation.* We dare not neglect the necessity for motivation in the handling of our cases, and must become adept at administering it.

38. *Patience.* Patience must be a mainstay of our habit system. We must never become impatient except when using impatience appropriately as a professional technique.

39. *Kindness-firmness.* A kind and sympathetic handling of each case, governed by good judgment and firmness, is essential to any degree of success in speech correction work.

40. *Mutual respect.* We must have respect for each one of our cases. Respect for them makes impossible contempt, disinterest, ridicule, unkind language and actions.

41. *Creative and adaptive imagination.* We must be imaginative in point of view, attitude, therapeutic practices, and personal relations, in dealing with our cases. A speech pathologist should be on the alert constantly to apply improvements in the handling of cases, including the governing policies for each case and the details of daily programs. To that end an active imagination must be constantly at work, and the therapist must be able to read the signs in the case that suggest the type and direction of modifications needed at any time.

We must be adaptive to the conditions and the personality of each individual case. A speech corectionist should be creative, in terms of adaptive therapeutic techniques, exercises, drills, projects, etc., to the particular needs of each case.

42. *Universal tolerance of therapeutic methods and techniques.* We must be 'mentally' ready and professionally trained to make effective use of any and every therapeutic technique that can possibly offer promise in any given case. We dare not be intolerant of *any* method or technique.

43. *Treating the person.* Primarily, we treat a *person,* not a defect or disorder. We treat disordered or defective speech only as aspects of the person.

44. *Treating cases-in-environment.* As an application of No. 13, above, we do not treat an *isolated* person, but

we treat a person-in-his-environment (sometimes altering or transforming his environment).

45. *Treating symptoms, not causes.* Basically, we do not treat symptoms, but causes. First we find the causes, and remove them if possible. Following that, the symptoms often disappear. If the causes cannot be entirely removed, we alleviate them as much as possible. Then those symptoms that have not disappeared are treated for removal or improvement.

46. *Adapting therapy to the particular case.* Recalling Number 29, that no two cases are ever alike, we should check our practice habits occasionally. Whenever we begin to apply the same therapy, without modification and adaptation, to any two cases, we are 'slipping'—'losing our grip.' Whenever this happens it is time for us to get out of the speech correction field, or to take some further advanced training in the field, or to reorganize our professional lives, or to have a thorough medical examination, or to look for other causes, such as disintegrating or disturbing conditions in our own home, perhaps.

47. *Only individual therapy professionally acceptable.* Knowing that cases always differ in quality and in degree and that any two cases will therefore vary more or less in needs, we know inductively what our experience has taught us: that the most effective therapeutic work must be *individual.* Adminstrators and school boards that require group therapy (as certain ones now do), must be patiently and sympathetically educated to an acceptance of the facts, even on a long-range basis.

48. *An ethic of accepting remuneration.* When we have done all we can for a given case without complete success we frankly tell him so, and do not accept further money from him. Also, at any point in the treatment when we have come to the conclusion that some other therapist can do more for him than we can, we straightway refer him to that correctionist.

Conclusion

THE FOREGOING is primarily a crystallization of much that I think should comprise a speech correctionist's professional code, and is advanced for the consideration of, and (I hope) adoption by, inexperienced and future correctionists, and all others to whom it appeals.

In addition, supplementary uses are available. Some trainers of speech correctionists will possibly want to use it, or parts of it, in harmony with their teaching technique, as a point of departure for class discussions. Or they may wish to permit some of their students to use it as a basis for a comparative study of philosophies in speech correction, or for other comparative studies. Some may want to use it as a basis for the evalution of particular methods of therapy. Some correctionists may wish to employ it as a basis for self-examination. Certain items doubtless furnish a basis for helpful conferences with cases.

If it should serve a few profitably, it will have been worth to me the time and effort expended.

News and Announcements

(Continued from Page 224)

cago public schools, as psychologist and speech pathologist at the Eau Claire, Wisconsin, orthopedic school and as speech and hearing instructor at summer camps, the University of Iowa and Purdue University.

She is a native of Monticello, Iowa and a graduate of the University of Iowa, where she received B.A. and M.A. degrees in clinical psychology and speech pathology. Since graduation, she has studied in European speech and hearing centers, Northwestern University, the University of Chicago and the University of Wisconsin medical school.

She is a felow of the American Speech Correction Association, a member of the American Public Health Association and American Society for the Hard of Hearing and an honorary member of Phi Delta Gamma.

Miss Shover will be responsible for the National Society's personnel planning and training in this field. She will also act as consultant to the local chapters and cooperating agencies in the organization of clinics and schools.

'Nationally speaking,' said Miss Shover, 'there are only enough personnel trained in cerebral palsy to take care of one per cent of its victims.

'It should be possible for the nation to provide adequate facilities for their care inasmuch as the cerebral palsy case load, unlike epidemic diseases, is a constant one.

'Authorities estimate that the cerebral palsied increase at the rate of 7 per 100,000 per year, mainly due to birth injuries but also prenatal and postnatal conditions and diseases.

'One of the seven will die in infancy and two more will be feebleminded, leaving 4 per 100,000 with normal intelligence but a paralysis ranging from a slight limp or lisp to complete helplessness and inability to talk.

'Of the living cerebral palsied, 100,000 below the age of 20 and 200,000 below 40 can and should be helped. These treatable cases increase at the rate of more than 5,000 a year.

'For them, we seek health, welfare, education, recreation, vocational training and employment in keeping with their individual abilities. From them, we hope to learn, in the field of research, more about the causes and prevention of cerebral palsy.'

Miss Shover's headquarters will be in the National Society's central office at 11 South LaSalle Street, Chicago, Illinois.

Personals

Dr. Bower Aly, Head of the Speech Department of the University of Missouri, will be Visiting Professor at the University of Hawaii for the coming academic year. Dr. Claude M. Wise, Head of the Speech Department of Louisiana State University, will take Dr. Aly's post at the University of Missouri during the latter's absence.

Miss Jean Ervin, who has been Assistant Director of the Speech Clinic at the University of Missouri, is joining the faculty of the University of Hawaii.

Dr. Lee Edward Travis has been named Chairman of the Speech Department at the University of Southern California.

Dr. Grant Fairbanks is joining the faculty of the University of Southern California. Until recently he was a Captain in the Army and Acoustic Physicist of the Aural Rehabilitation Unit, Borden General Hospital, Chickasha, Oklahoma, on leave from the University of Iowa.

Mr. D. E. Morley has resigned as Director of Special Education, Department of Public Instruction, Commonwealth of Pennsylvania. He has joined the Speech Department of the University of Michigan to help organize the Hearing Clinic. He will also work on his doctorate.

(Continued on Page 240)

Speech Disorders in World War II: V. Organization of a Speech Clinic in an Army General Hospital

William G. Peacher*

GUNSHOT WOUNDS of the head (5.9 per cent of the total number of casualties in 1944) (**11**) and neck (1 per cent of all injuries received) (**3**), have been common problems in the Services during World War II. Various associated physical and neurological residuals have been observed. One group in particular, which includes disorders of language and voice, has merited but not received proper attention. It is furthermore unfortunate that after so many years of war of world-wide magnitude and involving millions of men, so few studies have been forthcoming both in this country (**1**, **5**, **6**, **7**, **8**) and abroad (**4**, **9**, **12**).

Only recently the Surgeon General's Office outlined a general program for the management of cases of dysphasia (**10**) in the army. Whereas only one hospital was designated for treatment of these cases during World War I (**2**), clinics have now been organized in the 19 neurological and neurosurgical centers throughout the country. A survey of these investigations will be published at a later date and it is hoped that this will include data from the British army.

Speech correction facilities for patients who need further training are now being planned by the Veterans Administration. Under Public Law No. 16 (78th Congress), contractual arrangements can be made with institutions which are qualified to teach this subject. Contracts may also be made with competent private instructors who have suitable clinics. Under Public Law No. 346 (78th Congress), speech correction may be elected as a course of choice at a college which has been approved by the appropriate state agency. Veterans Administration facilities at the following addresses have been designated by the Medical and Hospital Service as speech correction centers: Brecksville, Ohio; Bronx, New York; Dallas, Texas; Hines, Illinois; Los Angeles, California; Minneapolis, Minnesota; Palo Alto, California; Washington, D. C.; West Roxbury, Massachusetts; and Wichita, Kansas.[1]

IT IS THE PURPOSE of this report to present further details as to the progress made in the recognition, development, and utilization of speech training in a rehabilitation program in the army. With the conclusion of the war, the teachings derived from a careful study of this nature will be applicable to the supervision of similar cases in civilian practice where only

*William G. Peacher, M.D., is a Captain in the Medical Corps, Army Service Forces, McGuire General Hospital, Richmond, Virginia. This is the fifth of a series of articles by Captain Peacher dealing with speech disorders in World War II. The first four articles are listed in the references at the end of the present article.

[1]For up-to-date, official information concerning speech correction facilities and contractional arrangements available through the Veterans Administration, address Dr. D. W. Morris, Secretary-Treasurer, American Speech Correction Association, Indiana State Teachers College, Terre Haute, Indiana.

limited numbers of these types of patients are seen from time to time. Too little stress has been placed on the various speech disorders being observed and on rehabilitation in all its ramifications, and too much emphasis has been placed upon the dysphasias, their diagnosis and routine methods of examination.

The investigations reported here were carried out initially at Brooke General Hospital, Fort Sam Houston, Texas, (May 7, 1943 to February 20, 1945), and later at McGuire General Hospital, Richmond, Virginia (February 22, 1945 to date.)

Four hundred and sixty (460) cases with speech involvement have been observed as of October 1, 1945. Two hundred and forty-six (246) or 53.47 per cent were due to wounds received in, or exposure to, enemy action. These figures again emphasize the trend toward increasing numbers of casualties with language and voice problems following acceleration of hostilities in the European theatre of operations beginning after the Normandy invasion through the German surrender in May, 1945. Previous statistics revealed 13 per cent (**5**), then 18 per cent (**6**), of the patients with speech disorders studied were disabled by battle circumstances. Only occasional cranio-cerebral injuries with accompanying language implication were examined during the Solomon, North African, Italian, and Philippine campaigns. The earlier and later patients in this series, therefore, were comparable to those observed during general clinic practice.

The classification previously adopted has been used throughout and is given below together with the number of cases studied. Definition of the terms used has been outlined in detail in several earlier communications (**5, 6**).

1. Dysphasia—129
2. Dysarthria—115
3. Dysphemia (stuttering)—105
4. Dysphonia—65
5. Dyslalia—46

Disorders of articulation, due to impairment of hearing (dysaudia) and to the psychoses and neuroses (dyslogia), have not been included in this study. The former are usually directed to one of the three hard of hearing centers (Hoff, Borden, and Deshon General Hospitals) where speech reading can be instituted and a hearing aid fitted if necessary. The dyslogias are admitted to one of the numerous neuro-psychiatric centers throughout the country where specific psychiatric measures are initiated.

Dyslalia is the term used to denote an organic or functional disorder of articulation exclusive of pathology implicating the central or peripheral nervous systems. This group includes maxillofacial injuries, gunshot wounds of the hard or soft palate, tongue, etc., cleft palate with or without hare lip, sigmatism (lisping), foreign dialects, etc. War casualties of the above types were seen only in the presence of other neurological deficits as these men were usually sent to a hospital designated for plastic surgery. It is not known whether speech therapy is available in these locations unless they also happen to be neurological and neurosurgical centers with associated speech clinics as noted. It is planned to investigate this situation and include the results in a future report. Foreign dialects were so frequently seen that it was not felt practical to add them to the series. Dysphemia and dysphonia of functional origin were not uncommon. Cases precipitated by combat were usually observed on the neuro-psychiatric service (at Brooke General Hospital), due to association with other symptoms of anxiety states. Preinduction cases of stuttering often adjusted to battle circumstances very well without aggravation and were observed after evacuation for other neurological injuries. Treatment of this group, therefore, was only occasionally indicated and was introduced as necessary during the period of hospitalization for associated wounds.

Disposition was then made on clarification of the surgical problems. Prolonged therapy for stuttering alone has not been deemed advisable. Impairment of the voice due to paralysis of the vagus nerve, its recurrent laryngeal branch, or to actual trauma to the larynx and the vocal mechanism is not uncommon following injuries to the neck. Adequate compensation is often obtained in patients with unilateral paralysis of a vocal cord following voice exercises and physiotherapy (heat and electrical stimulation over the course of the nerve in the neck). Occasional extrinsic and intrinsic scars involving the laryngeal mechanism have been revised with improvement. We have not as yet explored the vagus or recurrent laryngeal nerves in such cases for possible neurolysis, anastomosis, or nerve grafting. The various forms of dysarthria together with methods of examination have already been published (7, 8). The dysphasias will be considered separately at a later date.

Function of the Speech Clinic

THE CHIEF PURPOSE of the speech clinic is the diagnosis and treatment of disorders of speech observed during army service. The majority of these cases are organic in nature and most commonly have resulted from wounds or exposure to enemy action. Our present program does not include the training of speech therapy aides other than incidental to our training program. Every effort is made to standardize all methods of examination and treatment and yet to have a sufficiently labile program to allow for management of defects of varying severity. This is largely an unexplored field and reeducational developments have occurred more frequently as our experience has increased. It is hoped that these experimental techniques will bear out our preliminary opinion after careful follow-up studies so as to warrant general conclusions on these problems.

Organization of the Speech Clinic

ALL CASES necessitating speech therapy are admitted to the neurosurgical section. This is fortuitous, inasmuch as the majority of these men with language symptoms enter the hospital on this service. This is due to various neurological and neurosurgical complications of the central and peripheral nervous systems following penetrating and perforating wounds of the head and neck. These conditions can be divided into two groups:

(1) Hemiplegia, hemianopsia, convulsions, cranial and peripheral nerve paralyses, post-traumatic syndrome, etc.

(2) Cranial defects needing cranioplasty.

Preliminary débridement was accomplished at the time of the original craniocerebral trauma overseas. In general the speech disturbances, although not infrequent, were secondary rather than primary factors for evacuation. Only occasionally has a case of dysphasia been admitted first to the neurology section or of dysphonia to the ear, nose, and throat service. These men are seen in consultation and recommendations are made as to further studies and treatment. If the latter is necessary, transfer is made to the speech ward.

To obtain the best results, these cases should be under the direct supervision of an interested neurologist or neurosurgeon. This is not only for medical and administrative reasons but also to maintain a close liaison between all those participating in rehabilitation. The responsible medical officer alone can accurately evaluate and interpret the results of all examinations so that the correct treatment can be prescribed.

A well-trained supporting medical staff is essential for complete investigation of the individual. This staff should include a neurologist, neurosurgeon, psychiatrist, otolaryngologist,

psychologist, speech therapist, physiotherapist, occupational therapist, social and Red Cross workers, speech correction aides, etc. WAC's are assigned part-time to our service through occupational therapy (Arts and Crafts Department) as the need arises, for instruction. These girls have usually had speech courses in college and adapt readily to our program with proper guidance. Also the advantage of an industrious nursing staff and ward personnel in supervising cases of this type must not be overlooked.

Screening methods have not been found necessary in a program of this type as the admission history, physical and neurological examinations reveal the speech defect to the responsible neurosurgeon. Routine laboratory studies and consultations are requested as indicated, including Xrays, blood and spinal fluid examinations, audiometry, laryngoscopy, psychometrics, electroencephalogram, encephalogram, etc. Occasionally a craniplasty may be necessary to allow entering the dura if technically possible. This allows inspection, palpation, and biopsy of the cortex which adds to the completeness of the case history. Such procedures may actually improve speech by releasing cerebrodural scar, improving cerebrospinal fluid circulation, etc. Apparatus useful in the research laboratory such as the pneumograph, oscillograph, manoptoscope, etc., have not been found necessary at this hospital. A recording machine is essential to obtain an adequate and permanent record of the voice. It is useful to demonstrate progress, for purposes of demonstration, and has been of further value in training by pointing out the errors to the patient. Records are also available demonstrating the correct sounds which serve as models for training.

In the cases of dysphonia testing is accomplished mainly by a description of the voice including loudness, pitch, quality, inflection, rhythm, etc. The same is true of dysphemia in which the type of breathing, secondary manifestations, laterality studies, presence of hesitation, repetition, blocking, etc., are further tabulated. Detailed techniques for examination of dysarthria and dyslalia have already been recorded (**7, 8**). It is hoped that methods useful in examining a dysphasic patient will soon be ready for publication.

As previously noted, patients needing further language evaluation are admitted to the speech ward on the neurosurgical service. Treatment has been confined to in-patients and the majority of these have been returned from overseas. Enlisted personnel are placed on one ward and officers on another according to Army custom. As the former constitutes the majority of cases, classes and routine can be combined as indicated. All administrative and medical aspects emanate from the enlisted ward which is strategically located from the standpoint of rehabilitation. The floor plan includes the ward for patients, the doctors', nurses', and speech therapists' offices, music room, and a library. There are three separate wards available for the patients, of 29, 19, and 12 beds each. The largest is utilized and the others are always ready for immediate occupancy should the need arise. All consultants, occupational therapists, physiotherapists, electroencephalographic and X-ray laboratories are in closely adjoining buildings. The active surgical ward, if further neurosurgery is necessary, is on the floor above, making follow-up during these procedures relatively easy.

Satisfactory records must be maintained. Frequent examinations are made and detailed notes are given at least once every week or oftener if the progress so indicates. Frequent conferences and seminars are held so that problems can be discussed, new suggestions adopted, etc. Decision as to maximum benefit of hospitalization is controlled by the medical officer

who can then make further arrangements through Veterans Administration for any additional therapy that may be necessary.

The acute reactive pathology has usually subsided when these men enter our service, making speech therapy possible almost at once. Training, however, is not instituted until the entire medical situation is clarified, which includes the complete diagnostic survey and operations as necessary. Arbitrarily, this figure would be two to three months posttrauma, the time being consumed in evacuation (usually three to four weeks), overseas furlough (two to four weeks) and surgery (one to two weeks convalescence). It would be unwise to start earlier as adequate recommendations in relation to diagnosis and treatment cannot be made until all studies are available.

At this time the physician in charge discusses the plan of rehabilitation best suited to the individual. These recommendations are then carried out by the speech pathologist and the various consultants. Inasmuch as the offices of these men are associated (neurosurgeon and speech pathologist) frequent daily conferences concerning progress are held, making possible changes in programs as indicated.

The majority of our patients reside in the Third Service Command, which includes Virginia, Maryland, and Pennsylvania. The psychological effects of an initial furlough, followed by periodic furloughs every two or three months during rehabilitation, certainly balance a possible objection to this policy due to loss of valuable training time. Instructions are given to both the patient and his wife or parents prior to leave so that lessons can be continued at home. Patients are further allowed passes every weekend, occasionally for three days, and may go home each night if they live in Richmond.

CONSIDERABLE material has appeared in the literature on the importance and various stages of rehabilitation. These principles and findings will not be repeated here. It will suffice to emphasize its importance in the training and reeducation of this type of patient. It is necessary to determine what occupation the soldier has been previously engaged in or, if none is professed, to find out his particular interests that he may receive specialized training so as to be able to take his place in civilian life in spite of possible physical and neurological residuals. As the entire organism is affected in craniocerebral injuries, all separate factors must be considered so that treatment can be instituted and an adequate adjustment made.

Speech therapy is correlated with all programs, the exact length of time depending upon the individual. Treatment has been confined to the organic cases and the majority of these have included the dysphasias and dysarthrias of central nervous system origin. Only occasional patients with dyslalia and dysphonia have needed training in our experience. Certain cases in the latter group, and stutterers, will receive psychotherapy and rehabilitation at neuropsychiatric centers, but not in this clinic, other than as previously indicated.

It is not the plan of the present paper to include detailed methods of speech therapy as these will be discussed separately at a later date.

The daily reeducational schedule covered an eight-hour basis and was altered to suit individual needs. Other hospitals have undoubtedly adopted a similar plan to suit local conditions without altering the general principles. Individual training is given in the physicians' and speech therapists' offices. Group therapy sessions are held on a separate ward with emphasis on the presenting problem.

We were fortunate to have the services of four school teachers from

Richmond who volunteered to help our rehabilitation plan this past summer. Each instructor gave two hours a week to the hospital and the schedule was so arranged that teaching was carried out daily on the wards. Individual tutoring was given at the bedside to those who were not ambulant. Subjects taught included mathematics, English, spelling, reading, music, social science, and English composition; all correlated, of course, with the special speech problem present. A similar volunteer program is now being carried out two evenings a week with the assistance of eight teachers.

Another unique development in rehabilitation has been under the guidance of W. C. Locker, Director of Penmanship and Adult Education, for the Richmond School Board, in association with two assistants. Classes in writing, including retraining a right hand with slight residual weakness or change in handedness are conducted daily for a one-hour period. Such projects have received an unusually enthusiastic response from the patients and advancement is usually rapid. An extensive list of courses is further available through the United States Armed Forces Institute (USAFI). As improvement continues, high school and college courses are offered for credit by local institutions in cooperation with the McGuire Reconditioning Service Educational Department.

The following daily program is suggested, which must be balanced to include instruction, physical training, rest, and social activities. Time intervals and courses are flexible to suit individual needs.

Reconditioning Program

0800 to 0830—Ward work detail
0900 to 1000—Physiotherapy
1000 to 1100—Orientation and Educational Program (movies, concerts, etc.)
1100 to 1200—Penmanship or Speech Therapy
1300 to 1400—Physical Training
1400 to 1600—Occupational Therapy, Speech Therapy, Educational Classes (USAFI), Red Cross Divisional Activities, Recreational Therapy, Typing
1900 to 2100—Volunteer Teaching

Summary

THE ORGANIZATION of a speech clinic in an Army General Hospital has been outlined in detail. Special units that serve efficiently will depend upon the following factors:

1. An interested neurologist or neurosurgeon to assume complete responsibility of individual care.

2. A well-trained supporting medical staff.

3. Properly qualified speech pathologist, psychologist, occupational and physical therapists.

4. A satisfactory, workable, yet simple, classification to include dysphasia, dysarthria, dysphemia, dysphonia, and dyslalia.

5. Methods of examination must be sufficiently graded and standardized for all individual needs, to allow for a wide variety of performance, to compare results and to aid in determining prognosis.

6. Adequate equipment and laboratory facilities must be available, including a recording machine.

7. Detailed and frequent records must be maintained.

8. Centralization of all patients on one ward with strategic location of all associated therapies.

9. Specific speech therapy must be coordinated with a well-functioning daily reconditioning program.

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NO EXCUSE FOR NEGLECT

With the exception of those few whose defective speech is due to subnormal intelligence or to grave physical impairment, children with speech defects are not particularly different from other youngsters, either physically or mentally. Their potentialities are good. But they are handicapped. They need special training, and with it they can be helped to take their places as capable and constructive citizens.

If a child's speech defect can be corrected, this is, of course, the objective toward which to work. If it cannot be entirely corrected, the speech should be improved as much as possible, and beyond that the child needs a sound sense of values, a feeling of personal worth or security, and some trained ability with which to make a fair living for himself. These the home, the school, and the community can and should provide.

A child with a speech defect is an individual, and in a democracy he has the right to feel to the full his worth and dignity as an individual. He is *more than* a stutterer, *more than* a "case of cleft palate." He has assets to weigh against his liabilities. It is the obligation of his parents and his teachers to help him develop his assets and to make him proudly aware of them, so that he need not feel apologetic for his liabilities.

To every parent and to every teacher this much is to be said with emphasis and with feeling: If you have a child of your own, or if you have a pupil, who stutters or lisps, or whose cleft palate speech is nasalized and indistinct, and you cannot find a cure for him, the least you can do—and it is a great deal, indeed—is to teach him to look you in the eye, unafraid and unashamed, while he stutters at you, or speaks in some other way "incorrectly." If he can do that, he can do much besides that will be deeply satisfying to him and of value to his fellows.

From 'Ten Children You Should Know' by Wendell Johnson (*National Parent-Teacher*, March, 1944. Pp. 10-12.)

News and Announcements

(Continued from Page 232)

Mr. Lee Doerfler is working on his doctorate in the School of Speech, Northwestern University. He is particularly interested in the problem of psychogenic deafness. While at Deshon Hospital, he helped develop the Doerfler-Stewart Test, which is helpful in detecting psychogenic cases.

Miss Laila Larsen will head the staff of the Mobile Hearing Clinic which is under the auspices of the Minnesota Crippled Children's Commission. This past summer Miss Larsen was on the faculty of Michigan State Normal College at Ypsilanti, Michigan. During the war period she was in charge of auricular training in the Aural Rehabilitation Unit of Deshon General Hospital, Butler, Pennsylvania.

Dr. Herbert Koepp-Baker has resigned from the faculty of Pennsylvania State College in order to accept a professorship in the Medical College, University of Illinois. Dr. Koepp-Baker will work closely with Dr. Francis L. Lederer, Chief of the Eye, Ear, Nose and Throat Service of the Medical School, to build a broad speech and hearing program.

Mr. Leroy L. Horne has been appointed Vocational Advisor for deafened veterans in the New York regional office. Mr. Horne served in a similar capacity while in service in the Hearing and Speech Rehabilitation Clinic, U. S. Naval Hospital, Philadelphia.

Miss Martha Jones, speech correctionist in the Hartford, Connecticut, public schools, taught the course in Voice and Articulation Disorders and supervised the children with voice and articulation problems and cleft palate speech in the Speech Clinic at the University of Iowa during the past summer session.

The following people served as assistants in the University of Iowa Speech Clinic during the 1946 summer session: Mr. Jack L. Bangs and Mr. William Wolfe (cleft palate), Miss Grace Chenowith (cerebral palsy), Mrs. Jean Willis and Mr. Oliver Bloodstein (voice and articulation disorders), Miss Norma Walcher (speech retardation), Mrs. Louise Maddy Winter (hearing), Mrs. Charlotte Wurl and Miss Margaret Soisson (otology), Miss Kay Aldrich and Miss Arlene Gilcrist (reading), and Mrs. Eloise Tupper Oxtoby and Mr. George Wischner (stuttering). Miss Martha Howes assisted in the capacity of psychometrist. Mr. Tom Houchin and Miss Ruth Ann Young were recreation directors, and Miss Beth Goodson and Miss Patricia Kelly were liaison clinicians in the dormitories provided for children attending the Clinic by the Iowa Society for Crippled Children and the Disabled.

THE IMPORTANCE OF EXCEPTIONS

Charles Darwin, as remembered by his son.

There was one quality of mind which seemed to be of special and extreme advantage in leading him to make discoveries. It was the power of never letting exceptions pass unnoticed. Everybody notices a fact as an exception when it is striking or frequent, but he had a special instinct for arresting an exception. A point apparently slight and unconnected with his present work is passed over by many a man almost unconsciously with some half-considered explanation, which is in fact no explanation. It was just these things that he seized on to make a start from. In a certain sense there is nothing special in this procedure, many discoveries being made by means of it. I only mention it because, as I watched him at work, the value of this power to an experimenter was so strongly impressed upon me.—*Francis Darwin (1848-1925).*

The Practical Cogitator, selected and arranged by Charles P. Curtis, Jr. and Ferris Greenslet (Houghton-Mifflin, 1945), 218.

Abstracts of Current Articles

Mary Huber*

BASHOFF, P. H. The anatomy of the South African Negro larynx. *South African J. Med. Sciences*, 1945 **10**, 35-50.

On the whole, as demonstrated by the musculature in particular, the South African Negro larynx is a more powerful organ than that of the Caucasian. Those muscles which are the same in the two races, are broader, stronger and often of more complicated attachment in the Negro. The only exception to this is, as the author points out, the absence of the aryepiglottic muscle in the South African Negro, but this is compensated for by the presence of the aberrant muscular slips. Those muscles which are usual in the South African Negro but normally absent in the Caucasian help to strengthen the movements of the former's vocal apparatus. They also produce movements in certain parts of the larynx which in the Caucasian are not actively moved, e. g. the ventricular appendix in the Negro can be actively compressed by the superficial part of the superior thyroarytenoid muscle. The high ventricular appendix in the human is the homologue of the laryngeal pouches of the anthropoid apes.

The author observes that in the literature, most of the problems with regard to the nerve supply of the larynx have been settled except for the doubt which still clouds the question of the innervation of the transverse arytenoid muscle. Lemere, judging from stimulation experiments, came to the conclusion that the above muscle derives no innervation from the superior laryngeal nerve. Anatomists, notably Lore, Loeb and Dilworth, state that the muscle has a nerve supply from the superior laryngeal nerve.

In this particular study the author dissected a series of 102 South African Negro larynges (88 male and 14 female). He carefully describes the anatomy of the typical Negro laryngeal construction relative to cartilages, muscles, nerves, and vocal cords. The commonest variations receive consideration in his description. Distinct anatomical differences between the Caucasian and Negro larynges were found and their significance is discussed. A series of sketches of the laryngeal structure enhance this presentation. *(Calvin Pettit, George Washington University.)*

*Mary Huber (Ph.D., Wisconsin) served during the past summer on the staff of the University of Wisconsin.

BELL, J. E. Emotional factors in the treatment of reading difficulties. *J. consult. Psychol.*, 1945, **9**, 125-131.

The author suggests that in dealing with reading problems there is a tendency to overlook the fact that what is being diagnosed and treated is the whole personality of the person with the problem, including the way that personality functions in the special area of reading. Literature of the field is cited as indicating that in some cases personality maladjustments are the cause of the reading disability while in others the reading disability is the cause of the personality maladjustment; in still others maladjustments are felt to be the concomitants of the reading difficulty, not related to it as either cause or effect. Interest in technique may have been so great as to blind some experimenters to factors which account for success or failure in a reading program. Clinical psychotherapy has reached the conclusion that the particular method used in the treatment of personality disorders is of secondary importance to the kind of relationship set up between the therapist and the individual being treated. We might expect the emotional factors in the clinical or teaching relationships to have an especially important bearing in those cases where personality difficulties are involved in the reading problem.

The illustrative hypothesis that the difference between reading success in girls and boys is related to their emotional relationships with their teachers is advanced and developed. There is emphasis on the importance of linking reading with the child's previously learned behavior patterns by associating reading with his normal activities and interests. It is also suggested that the child be given the opportunity to express resistance against academic procedures. The teacher should be alert to the meaning of school success or failure of the child and the essentiality of a working arrangement between the teacher and the child's parents. *(M. H.)*

BLUM, M. R. How well do you hear? *Hygeia*. 1946, **24**, 510-511.

Just as a person with poor sight can be aided by wearing glasses, so can most hard of hearing persons be helped by wearing a hearing aid. A person can be seemingly stone deaf and still have the essentials of hearing relief. Hearing aids are made for all three types of hearing deficiency:

loss of conductivity in the middle ear, inner ear impairment, or a mixture of both. The original cost of the aids ranges in price from $40 to about $185. The upkeep is quite low.

A person cannot expect to hear as satisfactorily with an aid as with normal hearing. There will be noises which may first seem unbearable, but the wearer will grow used to them and learn to filter them out. The amount of sound detail may be regulated by controls on the transmitter.

The family of the hard of hearing person will be relieved to be able to treat the wearer of the hearing aid naturally, and should speak softly and in the pitch that is best for him.

Cases are cited to show satisfaction from hearing aids. Aids seem to fit every pocket book, every age, every occupation and every family conveniently. *(Virgina Worthington, Wisconsin.)*

BRAIN, RUSSELL W. Speech and handedness. *Lancet*, 1945, **2**, 837-841.

In this article the author discusses some of the theories that 'explain' handedness. It seems there are many reasons why a person may prefer to use one hand rather than the other. The fact that a person is right handed or left handed does not necessarily mean that this is the result of a natural predisposition to be so. Innate tendency may be obscured by training. According to the author, between five and ten per cent of the population of America is left handed, and left handedness is about twice as common in males as in females.

It is important to be able to determine natural handedness for neurological diagnosis; it makes it possible for one to determine in which hemisphere the lesion responsible for aphasia is situated. The cerebral hemisphere in which the speech is situated is known as the dominant hemisphere. The left hemisphere is usually dominant in right handed persons, while the right hemisphere is usually dominant in left handed persons. However, as the author points out, the speech center may be situated in the right hemisphere of a right handed person, and in the left hemisphere in a left handed person. Obviously these exceptions are of great clinical importance

The author, in his discussion, also treats of speech and handedness in human evolution as well as speech defects in relation to education. *(Leonard Finlan, New York University.)*

CARHART, RAYMOND. Monitored live-voice as a test of auditory acuity. *J. acoust. Soc. Amer.*, 1946, **17**, 339-349.

Statistical comparisons made of the relation between binaural thresholds for speech reception and 'better ear' thresholds for pure tones lead the author to the conclusion that auditory acuity is a generalized capacity measurable in different ways. The data for these comparisons were gathered at Deshon General Hospital. Speech reception was tested by monitored live-voice while pure tone thresholds were obtained with commercial audiometers.

One group of 129 persons was tested for 8 different scores on the pure tone audiometer and a speech reception threshold score for the Bell Telephone Intelligibility Lists. A group of 682 persons was tested for the 'better ear' average for 512-2048 c.p.s. and a speech reception threshold using the Harvard spondee list. Another group of 150 gave speech reception and pure tone thresholds which were used as a basis for deriving composite scores.

The results were the following. The eight different pure tone threshold scores correlated from .59 to .68 with the threshold for sentence reception. The correlation between the losses in speech reception for the spondees and the 'better ear' average for 512 - 2048 c.p.s. was .75. The numerical correspondence between these last two types of measurement, as gauged by group means and standard deviations, was relatively good; one cannot, however, predict with precision one score from the other. The test-retest reliability was approximately equivalent, the correlation being .75. Composite thresholds showed no greater reliability. Spondee and sentence thresholds showed no real difference.

It was concluded that the speech reception method when properly conducted gives an acceptable measure of hearing loss as well as the pure tone test. Using both tests together, however, gives the best results because the tester will know the degree and pattern of loss as well as the social significance of the loss. *(Tamara Pollack, Brooklyn College.)*

DANCA, E. D., The aphasic patient. *Amer. J. Nursing*, 1946, **46**, 234-236.

Some very practical ways in which the nurse can help the aphasic to relearn speech are discussed. Besides doing all she can to improve the physical and mental health of her patient, the nurse, according to the author, should follow these suggestions in the speech reeducation of aphasics: (1) Begin to teach the aphasic to speak as soon as he is well enough. (2) Create an atmosphere of cheerfulness around the patient. (3) Treat the aphasic as a normal person. (4) Begin with questions that require a 'yes' or 'no' answer. (5) Speak slowly, simply, and distinctly. (6) Let the patient see your lip movements while speaking. (7) Accentuate your words by actions. (8) Use the black-

board; let the patient see and hear the word as well as the object it represents at the same time. (9) Use words that represent objects in the patient's immediate environment. (10) Direct the patient in copying and writing sentences. (11) Do everything possible to get the cooperation of the family and associates in this program of speech reeducation.

Although Mrs. Danca implies that the nurse with her many duties may find it difficult to do all this, she never once mentions the speech therapist. *(Leonard Finlan, New York University.)*

EVANS, S. Cerebral Palsy. *Proceed. Royal Soc. Med.*, 1946, **39**, 317-320.

The author gives a historical background of the literature of cerebral palsy dating back to 1843 when W. J. Little discussed the condition in a course of lectures at the Royal Orthopedic Hospital. Little stressed the importance of birth injuries and also his belief in the prenatal lack of development of the brain in these cases; he stressed the frequency of mental impairment, speech defects, difficulties in feeding and of functional disability and typical deformities of the upper and lower limbs. He recognized the association between hemiplegia and epilepsy and realized that mild cases might exhibit no manifestation other than awkwardness, and that in many the intellect was unimpaired.

To the question, 'Are these children worth all the effort and money spent on them?' Little answered: 'I have had many cases under observation from one to twenty years and may mention as an encouragment to other practitioners that treatment based upon physiology and rational therapies affects an amelioration surprising to those who have not watched such cases. Many of the most helpless have been restored to considerable activity and enjoyment of life.'

Reference is also made to Dr. Winthrop Phelps' regime of treatment. Phelps insists on (1) an accurate diagnosis of the condition; (2) a careful mental assessment; (3) a wide, comprehensive and intensive approach so far as appropriate treatment is concerned. His classification on a motor basis of patients suffering from cerebral palsy is: (1) spasticity; (2) athetosis; (3) ataxia; (4) tremor; (5) rigidity. Descriptions of the localization of the lesion resulting in these various symptoms are given together with suggestions for treatment.

In speech training progression implies relaxation and correct breathing, vowel production, production of the easiest and later the more difficult consonants, followed by simple word production. A child satisfactorily rehabilitated can walk and talk at the same time. No length of treatment can be laid down, as each individual varies in his initial handicap and in his rate of progress. Complete, comprehensive and intensive treatment should be carried out in cases selected as educable. Coordination of effort between the physiotherapist, occupational therapist, speech therapist, school teacher, psychologist, and medical personnel is essential.

There are thousands of children suffering from cerebral palsy in England; the time is ripe for the establishment of a number of residential remedial schools as trained staff becomes available. These must be centers where children suffering from cerebral palsy can be treated and trained for the physical and mental aspects and be prepared to such a stage of rehabilitation that they can benefit by education. *(M. H.)*

GUTTMANN, E. and HORDER, H., Head injuries in children and their after-effects. *Arch Dis. Childhood*, 1943, **18**, 139-145.

Sixty cases of head injury are reported; the sample contains more boys than girls. Two-thirds of the cases were due to road accidents. The intelligence of the children was average and did not give any indication of their accident liability.

Two patients were reported who had had lacerations of the brain with aphasia. Fractures of the skull were more frequent than among adults. In the acute stage emotional symptoms were more impressive than clouded consciousness and intellectual loss. The incidence of headache did not differ much from that in adults. Two-thirds of the cases were fit for discharge after two weeks treatment in hospital. The absence from school due to accidents was two to seven weeks in half of the cases, in one-fourth of the cases less, in the other fourth more. The post-concussional syndrome was observed in 10 per cent of the cases; its incidence depended to a large extent on environment factors. Irritability was the most common after-effect. Persistent behaviour disorder was rare in this series, as also was intellectual impairment. *(Virginia Worthington, Wisconsin.)*

HARMS, E. (Editor). Approaches to the problem of anxiety and fear disturbances in young children. *Nerv. Child*, 1946, **5**, 8-95.

Names of authors and chapters included in this January, 1946, issue include: (1) Anxiety, phobias, and fears in young children, with special reference to prenatal, natal, and neonatal factors, by J. Louise Despert. (2) Orthogenesis of anxiety, by Hilde C. Kramer. (3) Neurotic anxieties

in children and their prevention, by Paul Bergman. (4) Early fears and early defences, by Judith Silberpfennig Kestenberg. (5) The persecuted child, by Frederick C. Thorne. (6) Some factors aiding the development of security in the institutional child, by Phillis McGill Linde. *(Arthur Secord, Brooklyn College.)*

HARMS, E. (Editor). Varying viewpoints on child psychoanalysis. *The Nerv. Child.*, 1946, **5**, 109-203.

In this edition Edith Buxbaum discusses psychotherapy and psychoanalysis in the treatment of children. Totemistic mentation and its complications for child analysis is the contribution of Maria W. Piers. The editor, Ernest Harms, presents a fundamental concept for analytical psychology of childhood: paternus and materna. Stella Chess considers the decisive influence of parental attitudes, and G. Henry Katz answers the question, 'Should the child be sent to an institution?' Child guidance work based on psychoanalytic concepts is discussed by Lia Knoepfmacher, and Eric P. Mosse writes a chapter on social psychiatry as an aid to child analysis. *(Arthur Secord, Brooklyn College.)*

HENDERSON, P. Defective speech in children. *Practitioner*, 1946, **156**, 119-129.

In this article Dr. Henderson includes rather brief comments with interesting statistics on the development of speech, incidence of speech defect in England, United States, Denmark, Hungary, and Belgium, intelligence and speech defects, statutory provisions for children handicapped by defective speech in England and Wales, and defects of speech in childhood.

Speech therapists in Britain are now recognized by the British Medical Association as medical auxilliaries. The National Board of Registration of Medical Auxiliaries keeps a register (issued annually, with copies obtainable from offices of the board, British Medical Association House, Tavistock Square, London, W. C.) of qualified speech therapists, and the College of Speech Therapists is the sole examining body in speech therapy in Britain recognized by the board. From October, 1945, the course of training for speech therapists will be three years and it will be whole-time. The present annual output of qualified speech therapists is less than 50 and there is an acute shortage of qualified speech therapists in the country. Ultimately, it is intended that every local education authority in England and Wales will appoint qualified speech therapists, and it is hoped that therapists employed by local education authorities will also be employed in local children's and general hospitals *(Leonard Finlan, New York University.)*

HOWARD, J. C., JR. Auditory impairment caused by drugs. *U. S. Naval Med. Bull.*, 1946, **46**, 387-396.

Of 1000 patients of the Aural Rehabilitation Service at the U. S. Naval Hospital, Philadelphia, 12 were found deafened due to the taking of quinine and two cases resulted from taking salicylates. Other drugs which have a selective harmful action on the auditory system are quinidine, arsenicals, lead, oil of chenopodium, phosphorus compounds, and mercury. These drugs damage the ganglion cells of the cochlea or the endothelial lining of small capillaries, cause changes of endolymphatic pressure, and may effect either the protoplasm or the nuclei of the cortical centers of hearing.

The drug-deafened are characterized by a perceptive type of hearing loss with an early suppression of the high tones. As the drug takes more effect, the threshold for the lower tones becomes higher and the whole curve flattens out. Rinné's test becomes increasingly positive as the bone-conduction time is shortened. The first sign of such impairment is tinnitus. There continues to be a progressive loss of hearing for a short time after the drug has been discontinued. Permanent damage depends on the individual reaction to the drug, the drug administered, and the length of time of the administration. *(Tamara Pollack, Brooklyn College.)*

KARLIN, I. W. Stuttering. *Arch. Pediat.*, 1946, **63**, 23-29.

Dr. Karlin, of the Speech Clinic in the Pediatric Department of the Brooklyn Jewish Hospital, takes the viewpoint that stuttering is primarily a pediatric problem since it has its onset during early childhood. He briefly touches on the theory of cerebral dominance, on a psychosomatic theory of stuttering, and on various psychological and biochemical studies done on stutterers. Where a child stutterer experiences difficulty in school or has a behavior problem the basis of the difficulty is not stuttering, which is usually blamed for all the ills and pains that befall a stutterer.

To induce relaxation, phenobarbital was given to several children, but they became more tense and stuttered more. Bromides helped somewhat. Recently Dr. Karlin has tried prostigmine bromide (15 mgm.) and atrophone sulphate (gr. 1/200) with apparent help. The numbers involved have been small, but the experiment is being continued. *(Loretta Wagner Smith, Brooklyn College.)*

KLEBANOFF, S. G. Psychological changes in organic brain lesions and ablations. *Psychol. Bull.*, 1945, **42**, 584-623.

The author discusses, through a review of the descriptive and qualitative studies in the field, the three questions which arise from the investigations of psychological alterations in organic disease of the cerebral cortex: is there a group of psychological changes which occurs with sufficient frequency and consistency to be considered as an 'organic psychological syndrome'? Can such mental symptoms be of any potential value in contributing toward the localization of the pathological process in the cortex? can an investigation of the mental changes contribute toward a knowledge of the pathological process?

In answer to the first question, the author thinks that there is in existence a frontal-lobe mental syndrome which includes intelligence deterioration, memory defects, impaired abstract-thinking ability, loss of initiative, difficulties in sustaining attenton, alterations in the general personality structure, and changes in psychomotor tempo and mood tone. The same symptoms usually appear accompanying a temporal lobe lesion but much later in the disease. This provides a partial answer to the second question. It is the time of onset of the symptoms which may contribute toward a knowledge of localization. The rest of the answer to this and to the third question will come, the author believes, only when specialized tests for abstract thinking, memory ability, judgment, comprehension, personality (Rorschach) tests of visuo-motor Gestalt function (Bender) and tests of sustained attention, explore the field. Then we will know more surely the exact changes which take place in the person. There is a review of the little that has been done with such tests in this field up to 1941. (*Tamara Pollack, Northwestern.*)

LARSON, M. J. Dramatic activities. *Crippled Child*, 1945, **13**, 110.

To the child with a physical handicap, creative activity is the tool by which he can capture some of the experiences denied to him because of his disability. Mary Jane Larson describes in her article the program of creative dramatics for 37 cerebral palsy cases ranging in age from 7 to 12 at the Sunbeam School for Crippled Children in Cleveland. The basic aim of the program was to instill the children with a sense of security through the medium of self expression. In addition, this technique aided motor abilities and facility in speech.

Because the physically disabled child is often self-conscious when appearing before an audience, puppets of the individual child's own creation were substituted. In this way, the child was performing without the inhibiting factor of having an audience watch him. Miss Larson explains the production of the plays in great detail and the enormous rewards which come from group participation. To summarize her article, Miss Larson says: 'Social integration is most important to the child who stands apart from the group because of physical difficulty. Much can be done to aid his general adjustment through informal, guided dramatic play. School time spent on an activity of this sort, once considered an unnecessary "frill", is not wasted; and if it can be started when the handicapped child first enters school and continued over a period of years, the benefits would be both gratifying, obvious and lasting.' (*Doris L. Trepel, Brooklyn College.*)

LEWIS, A. On the place of physical treatment in psychiatry. *Brit. med. Bull.*, 1945, **3**, 1-3.

Many physical methodologies are used in psychiatry besides convulsions, insulin, coma and frontal leucotomy. Continuous sleep, artificial pyrexia by malaria and others, tryparsamide administration, hydrotherapy, narcotherapy and the exhibition of various endocrine and vitamin preparations are employed and, recently, refrigeration. Many artificial combinations have been essayed, such as artificial pyrexia and fits in the treatment of schizophrenia and insulin after malaria for dementia paralytica. These three problems, insulin, fits and leucotomy, must be faced when any treatment of psychiatric illness lacking in demonstrable somatic pathology has to be appraised. Problems remain even if one agrees that convulsions are almost specific for involutional melancholia; that insulin often shortens the duration of the attack of schizophrenia and prolongs the subsequent period of satisfactory mental health; and that leucotomy may make life in the community possible or even normal for patients who might otherwise be hospitalized. (*Alice Mendenhall, Minnesota.*)

Book Reviews

Ernest H. Henrikson*

BINGER, CARL. *The Doctor's Job.* New York: W. W. Norton, 1945. Pp. 243.

If speech clinicians are to do the best possible job of speech therapy, they must keep abreast of at least the broad general trends in medicine. This is more important today than formerly in view of the closer liaison existing between the fields of medicine and speech pathology—a development which is gratifying to members of both professions. Much of the information the speech clinician needs must be acquired by talking with physicians, and a great deal must be learned from books.

It is not to be expected that by reading one book a speech clinician could acquire all the information he ought to have about current medical practice. Yet no one book with which this reviewer is familiar could give a better understanding of the contemporary medical scene than *The Doctor's Job,* by Carl Binger.

Dr. Binger has a great deal to say in this little book, and he says it with clarity, directness, and humor. He discusses the many ramifications of modern medicine, touching lightly on some and going into fascinating detail on others. One is aware that the author is a man of tremendous knowledge and experience. He is writing chiefly for the layman, and he does it with such simplicity that only the most stupid could fail to understand him. Yet at no time does he treat the lay reader with even a trace of condescension. For Dr. Binger writes with the humility and sincerity which only the wise and the understanding possess. One finishes his book with the feeling that the author must be a man of great charm and learning whom one would like to know better—an acquaintance seems to have been struck up in the reading of the book.

Throughout the book Dr. Binger reiterates the familiar but nonetheless important viewpoint of treating the patient as a whole, treating him as an individual with his own insecurities, hopes, satisfactions, and frustrations, and refusing to split 'mind' from 'body.' Yet he also makes one aware of the difficulty of thoroughgoing application of this point of view.

Particularly important to speech clinicians is Dr. Binger's discussion of psychiatric problems and psychosomatic medicine. The latter he regards as not really a new development in medicine, but rather as a re-emphasis in the light of modern knowledge of facts that the great men of medicine have always known.

The scope of the book may be indicated by some of the chapter headings: 'The Relationship of Doctor and Patient,' 'Medicine and Psychoanalysis,' 'Stomach Ulcer,' 'Office Practice, Hospitals, and Outpatient Departments,' and 'Socialized Medicine or Paying the Piper.'

It is to be hoped that *The Doctor's Job* reaches the large number of laymen and members of all professions who would enjoy and profit from it.

Wright Field SPENCER F. BROWN

DOHERTY, WILLIAM B. and RUNES, D. D. (*Editors*). *Rehabilitation of the War Injured.* New York: Philosophical Library, 1943. Pp. 684.

This book consists of a collection of papers by numerous authors on rehabilitation of the war injured. Speech therapists will be much disappointed in this work, because it contains but one paper on speech therapy, and this paper is almost an exact replica of its author's book written just prior to World War II. The first section of this book, containing eight papers on neurology and psychiatry, is of most interest to speech therapists.

In an article entitled "The Sequelae of War Head Injuries", D. Denny-Brown, points out that Credner found a general incidence of traumatic epilepsy in 38 per cent of 1990 patients after five years, and noted that 81 per cent of the cases with dural penetration develop epilepsy. This likelihood of epilepsy certainly makes more difficult the reeducation of aphasics.

Denny-Brown asserts that concussion is generalized in head injuries, and is produced by sudden acceleration or deceleration of the head; it is often absent in crushing injuries, for the head is not then subjected to change in velocity; likewise, the absence of concussion in penetrating injuries of the brain has often been noted.

Psychosis resulting from head injury is extremely rare; even when it does occur the patient must have had a strong predisposition to psychosis.

Denny-Brown found that mild mental defectives and psychopaths suffer unduly prolonged disablement from head injury, be-

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cause their adaptation to the stresses of the world, already precarious, is easily disturbed by head injury.

Denny-Brown believes that psychiatric treatment is most effectively undertaken by those who take the original psychiatric history, because they have already established rapport. He states that amytal narcosis is often employed to break down inhibitions and as a short cut to suggestive treatment. All anxieties are fully discussed, and reassurance given. Encouragement and supervision in graded occupation and exercise are necessary during the long convalescence; the psychiatrist should know what may reasonably be expected of each patient and should never ask him to do more. Red Cross and other social agencies should alleviate the soldier's family worries. Wylie McKissock and Hugh Cairns recommend similar therapy in their chapters on rehabilitation after head injuries.

Cairns states that causes of failure in rehabilitation include returning to work too early, physical softness on returning to the outside world, unrelieved anxieties, attacks of depression, unsuitable occupation, loss of intellectual capacity, epilepsy, and disabilivocational training under expert guidance, such as hemiplegia, aphasia, blindness, etc. He believes that with adequate facilities for much can be done to make such patients useful members of society, and at the same time to regain for them their self-respect.

In an article entitled 'Speech Disorders and Their Treatment', Stanley Cobb gives verbatim much of the material from his recent book, 'Borderlands of Psychiatry'; hence the reader is referred to the abstract of this informative book in the June, 1944, issue of the *Journal*. Cobb describes the fifth and most highly integrated speech level of the nervous system more clearly in this article than in his book, however. This is composed of the great association areas of the frontal and parietal lobes, and brings in memories, individual life experiences, and the impact of one person upon another. Although almost blank in infancy, these association areas become loaded with personal experiences in adulthood. When the environment becomes difficult, Cobb believes it is this level of cerebral function which is first affected; when put under emotional stress, almost any person stammers. Cobb states that stammerers are persons who habitually hesitate and stick in their speech under stress, but can read or talk with little hesitation when alone and relaxed; and that the essential trouble seems to be in the stammerer's social relations—he is shy, cannot put it over, is afraid to meet people, and fears he will stammer if called upon to speak. Cobb asserts that the best therapy consists of a combination of psychotherapy, socialization, and speech exercises.

The second section of this book contains sixteen papers on reconstructive and plastic surgery; the third consists of five articles on orthopedics; the fourth is composed of seven treatises on physiotherapy; and the fifth contains fourteen papers on occupational therapy and vocational guidance, including an article entitled 'Vocational Rehabilitation of the Deaf and Hard-of-Hearing Ex-Serviceman' by C. G. Bluett. Bluett states that the number and the percentage of veterans of World War II who must face a hearing handicap will be greater than for all previous wars, because the air service in particular generates this kind of disability. Bluett states that although many veterans felt they were being retained unnecessarily at Cape May, New Jersey, for lip reading after World War I, those who devoted three 45-minute lip reading periods daily for an average of 2.7 months as a bulwark against progressive hearing loss at the time when this was most needed benefited greatly.

These five major sections of the book are followed by two papers on the legal aspects of rehabilitation, and by two articles on vascular and neurologic lesions in survivors of shipwreck.

SAMUEL D. ROBBINS.
Institute for Speech Correction

GESELL, ARNOLD and AMATRUDA, CATHERINE S. *Developmental Diagnosis.* New York: Paul B. Hoeber (Harper & Brothers). 1941. Pp. 447.

Speech pathologists are interested in the development and maturation of the normal and abnormal child, especially as these relate to the acquisition or lack of average speech. They seek to learn the causes of deviations in speech development. *Developmental Diagnosis* is replete with hints, suggestions and diagnostic indications of abnormal development that leave little doubt of possible implications with speech deviations. Normal total integrated functioning of behavior is presented in many stages of development together with retarded or halted stages.

The book is divided into three parts. Part One concerns principles and methods of determining normal behavior patterns and rates of growth. Part Two deals with defects and deviations of development as ascertained by diagnostic methods. Part Three outlines diagnostic tests and guidance for disposition of defective children. The appendices contain examination techniques, growth charts and examination equipment.

Part One explains how the developmental status of an infant or child can be determined by behavioral reactions which occur with surprising chronological regular-

ity. The behavior symptoms are grouped into four fields, motor, adaptive, language, and personal-social, all of which are influenced by intrinsic growth factors that permit comparison of the normal and abnormal. Gross bodily control and fine motor coordination such as posture, head balance, sitting, standing, creeping, walking, etc. proceed in an orderly fashion. Coordination of eyes and hands and utilization of the motor equipment are observed to determine ability of the infant and child to meet ever-increasingly difficult situations. Language behavior, vocalizations, facial expressions, and the finer means of communication are superimposed upon the developing motor structure. The ability of a child to react favorably and successfully to his environment, his training and ability to be trained, point to the degree of adaption of a neuromotor mechanism.

From normal development to defective development and deviated development in Part Two, the authors proceed to present methods of measuring the amount of deviation in terms of developmental quotients for each of the four fields of behavior. High grade and low grade amentia, endocrine disorders, neurological integration and injury thereto, cerebral injury and prematurity are presented with the significance of each in relation to behavioral deviation. A most interesting chapter on sensory handicaps presents the correlation of such deviations to behavior responses, for example, the relation of deafness to quality and degree of vocalization, visual attention, social adaptions, and emotional behavior. Throughout the discussions the presence or absence of speech or stages of its development reveals the significance of growth deviations to speech defects. An interesting chapter entitled 'Environmental Retardation' points to the tragedy of institutionalized children or those with unfortunate backgrounds together with symptoms of their misfortune. Speech deviations often are among these symptoms.

This book should be on the 'must' list of collateral reading in speech pathology, and should be on the desk of every speech specialist.

WARREN H. GARDNER
Western Reserve University

GOLDSTEIN, KURT. *The Aftereffects of Brain Injuries in War, Their Evaluation and Treatment.* New York: Grune and Stratton. 1942. Pp. 224.

This book is based on experience gained by Dr. Goldstein during the first World War. He was in charge of a hospital in Germany, where he had the opportunity of examining systematically two thousand patients. Some 90 to 100 of these patients were under Dr. Goldstein's continuous observation for approximately ten years. The conclusions which are set down here, then, are the result of professional observation of great numbers and varieties of brain injured cases and also a great deal of follow-up over a long period of time.

The book is written primarily for physicians but is not too heavily technical to be of value to the speech therapist. The first half deals exhaustively with the symptomatology and the latter half with treatment.

Perhaps the most significant passages for our purpose in Part I are those which deal with the disturbances of the motor area and those lesions of the frontal lobes which result in aphasic, apraxic, amusic and agraphic symptoms.

But the first section, entitled 'General Symptoms,' gives needed background in the whole clinical picture. Dr. Goldstein emphasizes that the diagnosis and prognosis depend not only on the position and extent of the physical injury but also on the temperament and personality of the patient. He stresses the fact that many are seen as 'expressions of the change which a patient's personality as a whole undergoes as a result of disease and also of the struggle of the changed personality to cope with defeat and with demands it can no longer meet.' A third important factor in the behavioral pattern of the patient is the tendency to build substitute performances for those he is unable to execute.

In discussing the speech disturbances due to brain injuries, Dr. Goldstein examines critically some of the conclusions previously reached by neurologists. I have mentioned above his opposition to the restriction of defining symptoms merely in terms of the physical area damaged. He reports that while speech disturbances due to injury do not differ much from those observed in disease, there are some important differences. There has never been a case of complete word deafness observed in patients suffering from subcortical sensory aphasia. General disturbances of hearing occur, especially with gunshot wounds, but no word deafness as such.

The most frequent disturbance of speech is motor aphasia. With lesions of the temporal lobe, impairment of word finding processes and a complicated disturbance of virtually all speech performances are noted. This corresponds not only to Wernicke's description of cortical sensory aphasia but also lends color to Dr. S. Russell Myers' assertion that all aphasias are *mixed* aphasias.

A detailed description of physical and neurological therapy is followed by a most valuable discussion of social adjustment.

In the summary, Dr. Goldstein states that it is difficult to make any definite gen-

eralizations about results since they differ greatly in accordance with the nature and severity of the injury and also in accordance with the pre-morbid capacity level of the individual. The patient's mental ability and educational level are also factors in determining progress. The psychologic-pedagogic treatment has undoubtedly shown striking success. "Speech defects showed great modification often after a few months of treatment. The exercises, however, must be continued for a much longer time."

This book should be read carefully by all speech therapists who hope to assist aphasic veterans to recover their speech faculties.

LETITIA RAUBICHECK.

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OSBORN, LORAINE. *Your Voice Personality* (New Edition) New York: Putnam, 1945.

Loraine Osborn, the author of *Your Voice Personality*, has written a book on charm emphasizing the necessity for improving the voice and personality. The subject is approached from an elocutionary point of view and would be of little value to those interested in scientific methods.

The material is divided into three sections. Part One: How to Acquire a Good Voice, Part Two: Adding Qualities that give Personality to Your Voice, Part Three: How to Express Yourself.

It is in Part One that the author makes her most startling statements, which are by no means qualified. In the chapter 'Breath Control,' on page 17, Miss Osborn states, 'One of my pupils had a collapsed lung and was actually cured by correct breathing so that the X-ray showed after a few weeks that the lung was normal.' The reviewer checked with members of the medical profession and found that the cure depends entirely on the condition of the lung at the time it was collapsed. If there is no inflammation at the time and if there are no adhesions, the lung can inflate itself just from normal activity. There are types of collapsed lungs which can never regain a normal condition. A blanket statement such as Miss Osborn's is certainly open to question.

On the same page Miss Osborn goes on to say, 'Another young woman had a dislocated jaw which the doctor said would never go back in place. She was so afraid of throwing her jaw out that she kept it stiff, barely opening her mouth. The result was that she was in agony in her throat. When she found the right way to relax the jaw and breathe correctly, her jaw fell into place and her throat trouble was over.' This too is an unqualified statement which needs further explanation.

In the chapter, 'Tone Color' (emotions in voice) much space is given to the discussion of emotions and how they color the expression. The chapter ends with the following paragraph: 'In one of my groups was a young woman who was on the verge of a nervous breakdown. Her husband had lost most of his business in the depression and seemingly had turned to someone else for consolation. This woman found she had to get out of the house, go to lectures, take up courses—anything to 'find herself.' She eventually took a new lease on life, began thinking constructively, learned to control her emotions and breathe correctly, and soon joined a choir. At the end of a few weeks the woman was a changed person. . . . There was a case where even her complexion was transformed; from a sallow, muddy color to a rosy, healthful glow. Needless to say the wandering husband returned to the fold, and for that couple life again became normal.'

Parts Two and Three deal with self-expression. The author discusses such problems as self-confidence, how to speak over the telephone, magnetism in the voice, platform presence and dress, and the use of the microphone. Other phases of presentation are discussed; however, much of the materials in these two divisions of the book is devoted to chatting about Margery Wilson, Dale Carnegie, Lisa Sergio, Peggy Rickey, Stylist, and others.

The reviewer holds no brief against a popular style, and although Miss Osborn's approach is unscientific, it would seem that she should not have ignored recent research in the field of voice improvement.

JOHNNYE AKIN

Northern Illinois State Teachers College

PIKE, KENNETH L. *Phonetics: A Critical Analysis of Phonetic Theory and a Technic for the Practical Description of Sounds.* Ann Arbor: Univ. Michigan Press, 1943. Pp. ix + 182.

The study of phonetics is, as a matter of emphasis, something different for the student of speech correction from what it is for the student of historical linguistics or of contemporary pronunciation. Without suggesting that the latter should ignore this work, one might well say that the speech correctionist cannot afford to neglect Pike's critical analysis and constructive system. The very complexity of his scheme for 'Functional Analphabetic Symbolism' serves to point up the complexity of correlation of the speech mechanism with which the correctionist has to deal, a complexity which should be immediately and repeatedly brought to the attention of students.

Pike's scheme of symbolism does far more, of course, than indicate that many things are going on at the same time when a speech sound is uttered. It is at once an index to his theoretical discussion and a practical working tool. The immediate utility of the scheme as a working tool must be that it forces the analyser to make a complete and systematic study of what is going on. It forbids him to rest satisfied with a few superficial observations, such as are adequate for ordinary phonetic classification. The excellence of the scheme is obviously to be judged on the basis of its completeness and of its systematization; i.e., the compulsion which it exerts on the analyser to be orderly in his observation, and of its efficient economy in operation. I shall deal further only with the last point.

The shortest formula given by Pike as illustration is that for [t], the unreleased segment in isolation. It is as follows, with dividing lines introduced by the reviewer to break it up into parts for discussion:

[*M*aII] [De] [*C*Vve] [Ic] [AP] [*p*a] [*a*t] [*d*tl] [*t*n] [*r*an] [*s*fs] [*S*i] [*F*Ss]

The first unit, [*M*aII], indicates that 'the productive mechanism' [*M*] is an 'air-stream mechanism' [a] as 'initiator' [I] 'for lung air' [l]. I suggest that the single symbol [L] would be adequate. The [I] as fourth letter in the Pike symbolization cannot be preceded by any other symbols than [*M*aI]; everything represented by those three symbols is necessarily implied by [l]; the three symbols do not represent steps in an analytical process; there is no possibility of ambiguity. It hardly needs to be said that one symbol in place of four is desirable economy.

In the next unit, [e] (egressive) is sufficient, unambiguously implying [D] (direction of the air stream). For the third unit, [v] (velic), implying [V] (valvate stricture); is sufficient; [e] (subvalvate esophageal stricture) is really not needed, as Pike says on page 133, and [*C*] (controlling mechanism) can be taken care of by order, if it really belongs here. System in order can, indeed, be used to avoid all the italicized symbols, which are used only to classify the immediately following specifying symbols. Thus it might be decided that the first symbol, a capital, should indicate the initiating productive mechanism, the second the direction of air stream, with [x] when there is no air stream, the third to indicate the valvate stricture. Ten symbols become three: [Lev].

Similarly, the next division on the 'degree of air-stream interruption,' might well start with another capital letter to suggest a new aspect of the description. [S] might be suggested for Pike's [IC] (interruption complete, stop), or better, [Sx] because for other kinds of sounds Pike's scheme would call for duplex symbols; e.g., [Rc] (resonant central). Again a capital letter might be used to introduce the description of the formation of the stricture [P] (primary, i.e., oral) in this case. The whole formula reduces to something like: LevSxPatlxxfIs, with [x] regularly used to mean 'normal' or 'not significant,' and the [s] (straight) of Pike's eleventh unit omitted as adding nothing to the [f] (flat).

I should not want to declare that this formula is complete—there is no symbol for 'relative strength of acoustic impression' such as Pike has in his [n] formula—or best aranged—[1] (Pike's [*dt*] for degree of articulation in time, long) would seem not to belong in the group dealing with primary stricture. However, I do think that by observing a pattern of order, the formulas can be advantageously reduced in length without any loss whatever in clarity or completeness or systematization.

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